

**William M. Berrios and Thomas R. Sampair**

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National Aeronautics and  
Space Administration

**Langley Research Center**  
Hampton, Virginia 23665-5225



# **LONG DURATION EXPOSURE FACILITY POST-FLIGHT THERMAL ANALYSIS PART 1**

**William M. Berrios**

**NASA/LaRC  
MS 434  
Hampton, Va. 23665-5225  
Ph. (804) 864-7183**

**&**

**Thomas R. Sampair**

**Lockheed Engineering & Sciences Co.  
MS 904  
144 Research Dr.  
Hampton, Va. 23666  
Ph. (804) 766-9633**





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\*Published under separate cover



## SUMMARY

The Long Duration Exposure Facility (LDEF) post-flight thermal model has been correlated to space flight temperature data recorded by the Thermal Measurements System (THERM), LDEF experiment P0003. The THERM experiment consisted of five copper-constantan thermocouples (T/C's), one suspended radiometer, two thermistor reference measurements, and an electronic data recording system. Total THERM system accuracy was designed to be within  $\pm 10^{\circ}\text{F}$  for all measurements taken over a range from  $-30^{\circ}\text{F}$  to  $170^{\circ}\text{F}$ . The actual measurements ranged from a low of  $35^{\circ}\text{F}$  to a maximum of  $134^{\circ}\text{F}$  for the T/C located on the longeron between row 6 and 7 at experiment bay B3. Flight temperatures, recorded at intervals of approximately 112 minutes for the first 390 days of LDEF's 2106 day mission were compared with predictions calculated by the thermal mathematical model (TMM). This math model was unverified prior to flight. The post-flight analysis has reduced the thermal model uncertainty from  $\pm 40^{\circ}\text{F}$  to  $\pm 18^{\circ}\text{F}$ .

The LDEF was deployed on April 7, 1984 (12:26 EST) into a gravity gradient stabilized attitude at a  $28\frac{1}{2}^{\circ}$  orbit inclination. Orbital beta angle ( $\beta$ ) for the LDEF mission was  $\pm 52^{\circ}$ . LDEF altitude at deployment was 255NM and had fallen to 180 NM by the time of retrieval on January 12, 1990. Post-flight analysis indicated the LDEF had yawed  $8^{\circ}$  to  $12^{\circ}$  from row 9 towards row 8, thus biasing the leading edge (velocity vector) towards row 10 rather than row 9 (Fig. 1). Whether LDEF was yawed at deployment or sometime later in the mission is not known. For the post-flight calculation of temperatures, a new set of orbital detailed heat fluxes were calculated for the beta angle range of  $\pm 52^{\circ}$  at  $10^{\circ}$  intervals for an average LDEF yaw angle of  $10^{\circ}$ . A composite daily averaged heat flux table for the first 390 days the LDEF mission was generated for all rows using the new set of orbital heat fluxes and the daily beta angle history obtained from ground tracking stations. The new set of daily averaged thermal fluxes were used for calculation of daily averaged temperatures for direct comparison to flight data.

The external surface thermal properties, absorptivity ( $\alpha$ ) and emissivity ( $\epsilon$ ) were measured during the deintegration operations of the LDEF at the Kennedy Space Center (KSC). All external structural surfaces, Earth and space end thermal panels, tray lips, and a limited number of experiments were measured at exposed and unexposed areas. The measured  $\alpha/\epsilon$  values combined with nominal material specifications were used to formulate the LDEF surface property conditions that existed at the beginning of the mission, end of the first year (390 days), and end of the mission (2106 days). Matching of the thermal model to flight data also enabled a better estimate of surface optical property degradation, bolted joint conductances, and correction of thermal radiation couplings from values used in the pre-flight model.

Results of the best fit thermal model are presented for all locations in the facility, including the 2, 3, and 4 equivalent node representations of the experiment trays. Results include temperatures for the beginning-of-mission (BOM), end-of-mission (EOM), and detailed orbital temperatures calculated for beta angles of  $-52^{\circ}$ ,  $0^{\circ}$ , and  $+52^{\circ}$ . Thermal orbital average heat flux data for both the BOM and the EOM as well as the per orbit heat flux from  $-52^{\circ}$  to  $+52^{\circ}$  in  $10^{\circ}$  increments have been included in the appendices A and B. Also included in this report is a comparison of measured temperatures vs. calculated values for locations where temperature sensors were located on the LDEF structure.

## **INTRODUCTION**

The LDEF thermal math model description is presented in this report. The purpose of this report is to provide the LDEF principal investigators with a complete set of thermal boundary conditions (incidence heat flux and the temperature of the structure surrounding the tray) to use as input into their detailed thermal math models of their experiments.

The LDEF was developed by the Office of Aeronautics And Space Technology (OAST) and Langley Research Center (LaRC) to provide a shuttle-launched low cost accommodation for relatively simple experiments. These experiments would require long duration exposure to space environment (approx. 1 year). Many experiments are completely passive, depending entirely on post-flight laboratory investigations for the results.

## **LDEF DESCRIPTION**

The LDEF is a reusable 12-sided cylindrical bolted assembly structure 14 ft. in diameter and 30 ft. in length (Fig. 2) with an empty weight of 8,500 lbs. 6061-T6 aluminum extrusions are the main components used for construction of the bolted and welded LDEF structure. The periphery will hold up to 72 equally sized rectangular (34 inches by 50 inches) trays and the end structures will hold another 14 smaller trays. Interchangeable LDEF trays of 3 inches, 6 inches, and 12 inches in depth (Figures 3 - 7) are mounted on the external surfaces for accommodating experiments. Each tray can accommodate one or more self-contained experiments of up to 180 pounds in weight. The flight configuration for this mission (Ref. 1) included 86 trays with a total of 57 experiments for a combined total weight of over 21,000 lbs.

## **Mission History**

The LDEF was deployed on April 7, 1984 during the Challenger mission STS-41C. While the planned mission duration was for one year, the actual retrieval of the facility did not occur until January 12, 1990 with the Columbia flight STS-32. This resulted in a mission duration of approximately  $5\frac{3}{4}$  years (2106 days). Active flight temperature data for the LDEF facility were recorded by the THERM experiment P0003 for the first 390 days (13 months) of the LDEF mission (Ref. 2).

## Standard LDEF Identification

The thermal analysis uses the standard LDEF conventions for identification of facility locations (Fig. 1). The LDEF location identifying convention is as follows:

1. The 12-sided polygon is assigned incremental row numbers in a clockwise direction as observed from the Earth end. The keel fitting is located at the center ring row 6, thus it is located at the bottom of the clock position. While in orbit, Row 3 is the trailing edge of the facility and row 9 is referred as the leading edge of the facility. Once LDEF is in free flight, row 6 points towards the south pole and row 12 points towards the north pole.
2. The 6 peripheral experiment bays are identified alphabetically from A to F. The "A" bay is adjacent to the Earth and bay "F" is adjacent to the space end as shown Figure 1.
3. The Earth facing end has been assigned a G identifier (i.e. G-2, G-4, G-6).
4. The space facing end has been assigned an H identifier (i.e. H-1, H-3, H5).
5. Structural components are identified relative to adjacent bays, examples are:
  - a. Intercostal AB1 (Between Bays A and B, Row 1)
  - b. Longerons ABC1-2 (Between Bays A, B, and C, Rows 1-2)
  - c. Center Ring CD1 (Between Bays C and D, Row 1)

## Thermal Control

The thermal control of the LDEF was totally passive by design, thus relying on internal radiation heat transfer, heat conduction paths, and the external surface coatings ( $\alpha/\epsilon$ ) for facility temperature control (Fig. 8). All interior structure and tray surfaces were coated with Chemglaze Z306 high emissivity black paint ( $\epsilon=0.90$ ) to minimize any circumferential thermal gradients and to maximize the heat transfer across the facility. In addition, radiation blockage was decreased by minimizing the number of structural components inside the spacecraft. To minimize conduction heat transfer from the structure, the experiment trays were attached to the LDEF structure by eight 2"× 5" aluminum clamps along the tray perimeter (Fig. 9). The tray mounting scheme minimizes the contact conduction area through which heat can be transferred between the facility and the experiment trays.

The LDEF experiment and tray thermal boundary condition design limits are shown in Table 1. The LDEF internal average temperature was required to be maintained between 10°F and 120°F for the flight. This was accomplished by careful selection and placement of the experiment trays with their wide range of thermal control coatings. The various tray types were uniformly

distributed over the surface of the facility to equalize the thermal properties. The distribution of the exterior surface coatings was such that over 50% of the thermal control surface area was provided by the chromic anodized coatings on the facility's aluminum structure, tray flanges, and debris panels (Space Debris Experiment S0001, ~ 24 trays,  $\alpha/\epsilon=0.32/0.16$ ). The external surface  $\alpha/\epsilon$  for each of the tray flanges and debris panels were left undefined until the experiment selection was complete. Once the tray thermal control coatings were known, the surface  $\alpha/\epsilon$  for the tray lips and debris panels were selected to maintain the facility temperature within the thermal design requirements.

The LDEF structure and all experiment trays were closed to prevent solar heat flux from entering the interior. Venting holes were distributed uniformly around the facility, this venting area was approximately 0.15% of total external surface area. The thermal model accounts for the venting holes by radiatively coupling the LDEF interior to the space environment.

## **THERMAL MODEL**

### **Thermal Analyzer Computer Programs**

The programs used for the calculation of the LDEF incident heat fluxes and temperatures were the Thermal Radiation Analysis System II (TRASYS II, Ref 3) and the System Improved Numerical Differencing Analyzer (SINDA, Ref 4). SINDA calculates temperatures by solving lumped parameter representations of physical problems governed by diffusion-type equations. Parameters include thermal mass, surface ( $\alpha/\epsilon$ ) properties and thermal conductance and radiation couplings. All linear conductors for the structure and experiment trays were calculated by hand. Over 20,000 computer generated internal radiation couplings were reduced to a manageable size by lumping the very small values into an internal dummy node (233) and then adjusting the remaining values to assure that the sum of the view factors is equal to one for each internal surface. Other detailed radiation couplings between isolated surfaces were generated by hand. The TRASYS II program was used to calculate the solar, albedo, and infrared incidence radiation heat fluxes.

### **Thermal Model Description and Assumptions**

The original thermal model (Ref. 5) was created prior to the LDEF deployment and was restricted by program and computer capabilities to less than 300 nodes. The post-flight analysis has grown to 327 nodes in order to improve the mathematical model and facilitate comparison to the THERM experiment temperatures. Most experiment trays were described by a 2 node lumped parameter model with one external node representing the experiment and one internal node for the tray. The external facing tray mounting flanges were included in the internal node and therefore this node was connected directly to the space environment. The more complicated experiments were described by 3 and 4 node models with more than one external surface node.



The two, three, and four node experiment models were created by taking a detailed thermal model for each experiment which could be up to 80 nodes in size and then reducing this detailed model into a two, three, or four node representation with a comparable energy balance and equivalent  $\alpha/\epsilon$  surface properties (Fig. 10, Ref. 6). Figure 11 shows how the experiment tray nodes are arranged in relation to the structure nodes in the thermal model.

The intercostal and longerons were grouped into 24 longeron nodes. The intercostals were divided into two halves, with each half assigned to the adjacent longeron. Although the intercostal is bolted to the longeron, they saw a uniform environment and were considered isothermal. The center ring was divided into 12 equal parts with each part attached to adjacent longeron nodes. Separate nodes were used for the end of the longerons to take into account the temperature differences that exists between the ends and sides of the LDEF structure. Tray/structure thermal interface and thermal geometry representations are presented in Figures 12 and 13.

Bolted joints were assumed to have a conduction area equal to 25% of the total joint surface contact area. A thermal conductance ( $\kappa$ ) value of 7.4 Btu/hr-in-°F was used for the 6061-T6 aluminum structure. View factor values of 0.12, 0.76, and 1.0 were used to couple all earth end, side row, and space end experiments to space. The Earth was coupled to LDEF with view factors of 0.88 for the earth end and 0.24 for the side row experiments. The space end experiments were not coupled to the Earth. The temperature values presented in this report for the tray/experiment (T/E) equivalent nodes only represents an average for that tray location. To obtain more accurate experiment component temperatures the Principal Investigators must rely on their own detailed thermal model using the LDEF interior average temperature (dummy node 233) and temperature of the structure surrounding the experiment tray from the LDEF thermal model as the boundary conditions for their thermal models.

A complete nodal breakdown of the LDEF thermal model is presented in Figures 14-28. The nodes are laid out by rings (A - F) with row 12 at the top and rows 1 - 11 going in the clockwise direction around the ring. Trays located on rings A and F are surrounded by four structure nodes while trays located on rings B and E have only two structure nodes. Trays on rings C and D are surrounded by three nodes the same two nodes as B and E and a center ring node.

## **ORBITAL ENVIRONMENT**

### **Beta Angle and Attitude**

The LDEF was deployed into a gravity gradient stabilized attitude at an orbit inclination of 28½° to the equatorial plane. The gravity gradient orbit allows the LDEF to maintain a specific leading (row 9) and trailing (row 3) edge and also allows the experiments in rows 11, 12, 1 to the north or rows 4,5,6 to the south, face the sun or space for extended periods of time. The minimum/maximum orbital beta angle ( $\beta$ ) for the LDEF mission ranged from +52° to -52°. The diagram shown in Figure 29 defines the  $\beta$  as the angle between the plane of the orbit and the sun illumination vector.

Due to the symmetry of the spacecraft, the north (row 12) and south (row 6) sides experienced the maximum worst case daytime sun exposure at the extremes of the  $\beta$  angle range. Row 6 experiences maximum incidence heat flux at a  $\beta$  of  $-52^\circ$ , while row 12 receives the maximum at a  $\beta$  of  $+52^\circ$ . Rows 3 and 9 experience a maximum flux at approximately  $\beta$  equal to  $\pm 10^\circ$  and the minimum flux at  $\beta$  equal to  $+52^\circ$  or  $-52^\circ$ . Shown in Table 2 are the LDEF row numbers and the  $\beta$  angle at which they experience their maximum and minimum exposure to the solar incidence flux. Further inspection of the LDEF after it was returned to Earth revealed that the leading edge velocity vector was yawed approximately  $8^\circ - 12^\circ$  towards row 10.

Orbital ground tracking data was obtained from the Johnson Space Center for the complete LDEF mission. The beta angle history from April 7 1984 to January 20 1990 for the LDEF is shown in Figure 30 with the individual years given in Figures 31 - 36. The beta angles used in the thermal analysis for the first year are shown in Figure 31 and for the EOM in Figure 36. LDEF was placed in orbit at a perigee altitude of 255 NM and had fallen to 180 NM when the facility was retrieved on January 12, 1990. A complete altitude history for the LDEF mission is presented on Figure 37.

### Incident Heat Fluxes

The heat flux calculations for the facility were updated with actual solar constant values as measured by earth orbiting observatories (Ref. 7, 8). The average solar constant, planetary infrared, and albedo values used in this analysis are presented in Table 3. The updated incident thermal fluxes were calculated using the TRASYS II computer code and entered as input to the SINDA thermal analyzer. The incident fluxes were converted into absorbed fluxes when the SINDA program was executed. Transient fluxes were calculated for an orbit beta angle range between  $+52^\circ$  and  $-52^\circ$  in  $10^\circ$  increments. Incident heat flux calculations were based on a yaw of  $10^\circ$  for the LDEF facility. All heat fluxes presented in this report are the row incidence flux which means the form factor for each row are built into the flux for that row. The principal investigator need only to account for surface  $\alpha/\epsilon$  properties when using these fluxes in their thermal analyses.

Appendix A contains plots and tables of the transient heat flux data for each  $10^\circ$  increment calculated. From the range of transient fluxes calculated above, two composite daily average heat flux tables were developed for the first and last years of the mission using the beta angles shown in Figures 31 and 36. Thus input fluxes for both steady-state and transient thermal models were generated. Given in Appendix B are the plots and tables for the first year daily average fluxes versus mission elapsed time (MET) for each row on the LDEF. The steady-state model is used to predict the daily average temperature for the spacecraft over the first and last years of the mission while the transient model is used to predict orbital day/night temperature cycles. The cases analyzed with the transient and daily averaged thermal fluxes are presented in the Appendices C - E and include:

- BOM daily averaged temperatures (Appendix C) for 13 months (390 days), including seasonal and daily change of orbital beta angles. Fluxes were calculated following orbital ground tracking data (Fig. 31) during the first year of the LDEF mission.

- EOM daily averaged temperatures (Appendix D) for 13 months (390 days), including seasonal and daily change of orbital  $\beta$ 's. Fluxes were calculated following orbital ground tracking data (Fig. 36) during the last year of the LDEF mission.
- Day/night temperature cycling for orbit  $\beta$  equal to  $+52^\circ$ ,  $-52^\circ$ , and  $0^\circ$  (Appendix E).

## **DATA**

### **Flight Temperatures**

The flight temperature data for the LDEF were obtained from the THERM system experiment P0003 (Ref. 2). The THERM experiment consisted of five copper-constantan thermocouples (T/C), one suspended radiometer, two thermistor reference measurements, an electronic scanning system, one 7.5-V battery, and an interface harness with the Low Temperature Heat Pipe Experiment Package (HEPP). The THERM data was recorded on dedicated channels of the shared experiment power and data system (EPDS) tape recorder in the HEPP experiment. The design objectives for the THERM experiment were as follows:

- To significantly reduce the uncertainty of  $\pm 40^\circ$  for the LDEF structural temperature values calculated with the pre-flight thermal model.
- Provide an approximate indication of the LDEF attitude in flight.

The THERM hardware was located at selected areas of the LDEF interior in order to maximize the thermal environment characterization with a limited number of measurements (Fig. 38). Two thermistors measured the THERM electronic junction temperatures and were used for system calibration (thermistors #2 and #8). A measurement of the LDEF interior temperature average was made by suspending a radiometer with a T/C at the center of the LDEF interior (T/C #4). The radiometer was radiatively coupled to all of the interior surfaces, thus providing an average temperature of all interior surfaces. T/C #1 was located on the center structure to provide a backup temperature value to the radiometer. The center structure is a massive aluminum part that carries the main load of the spacecraft during the deployment and retrieval operations and is radiatively coupled to most of the internal surfaces. T/C #3 was located on top of the magnetic viscous damper thermal radiation shield. This T/C was thermally insulated from the dome and was used to measure the thermal environment around the viscous damper. But because T/C was mounted between two mylar disks and then taped to the damper dome, the T/C was thermally isolated from the environment it was trying to measure, therefore authors have very low confidence in the data taken at this location. Furthermore the temperature measurements at this location showed the largest difference from the calculated values.

The structural temperatures were characterized by the remaining three T/C's. T/C #5 was mounted on a structural member located on row 6 of the facility. This area was parallel to the orbit plane and experienced incident thermal flux environments that varied widely, depending on

the orbital  $\beta$ . For  $\beta$ 's from  $0^\circ$  to  $+52^\circ$  this side of the facility did not see direct solar incident thermal flux (albedo only). For negative  $\beta$ 's from  $0^\circ$  to  $-52^\circ$ , the solar flux occurs for the full orbital daylight period with the  $-52^\circ$   $\beta$  being the maximum solar flux exposure for this row. This T/C also helped validate LDEF's in-flight attitude. T/C #6 was located on the space end structure near row 12 to provide space end mounted experiments with representative boundary temperatures. The space end location had the maximum radiative coupling to space and no incident planetary or albedo thermal fluxes. The last temperature measurement, T/C #7, was located on the earth end structure near row six in order to measure the night/day (N/D) temperature cycling on that end with maximum radiative coupling to the planet.

The raw and daily average flight data for the eight thermocouples are plotted and tabulated versus mission elapsed time (MET) in Appendix F. Flight temperatures were recorded at eight internal locations for the first 390 days of the mission at intervals of approximately every 112 minutes. Total system accuracy was designed to be within  $\pm 10^\circ\text{F}$  for all measurements over the range  $-30^\circ$  to  $+170^\circ\text{F}$ . The actual recorded temperatures for all seven locations ranged from a minimum of  $35^\circ\text{F}$  to a maximum of  $134^\circ\text{F}$  at the longeron 6-7 location (T/C #5). The recorded temperatures were used to verify the pre-flight thermal model calculated temperatures and to calibrate the post-flight thermal model temperature predictions.

### Surface Coatings

Upon return of the LDEF to the Spacecraft Assembly and Encapsulation Facility 2 (SAEF 2) at the Kennedy Space Center (KSC), Florida, the external structural surface thermal properties were measured after removal of the experiment trays (Ref. 9). Surface thermal properties on all longerons, intercostals, and tray lips were measured. Several tray surfaces and a limited quantity of experiment surfaces were also measured. Surfaces measured included aluminum (bare, clear, and black chrome anodized), silvered Teflon films, and paints. As seen in the surface distribution chart (Fig. 39), the largest external surface material on the LDEF was aluminum with a range of anodized surface finishes. The anodized aluminum was chosen as the main thermal control coating for the LDEF facility because of the ease in which the  $\alpha/\epsilon$  thermo-optical properties could be varied by the variable chromic anodizing process (Fig. 40) developed by R. J. Duckett and C.S. Gilliland of the Langley Research Center (Ref. 10,11).

For correlation of space exposure effects, surfaces that were blocked from direct space exposure by other hardware (i.e. tray lips & clamps) were measured and compared to exposed surfaces. A large sampling of the anodized aluminum was obtained by direct measurement for all of the LDEF periphery. Unexposed surfaces showed  $\alpha/\epsilon$  values close to the nominal new surfaces, while the exposed surfaces showed several degrees of degradation depending on their location on the LDEF. The delta between the exposed and unexposed surface coatings were used to estimate the coating degradation. These deltas were applied to the nominal (new) surface-optical properties at the beginning of the mission to approximate the degradation that took place during the first year of flight. The direct measured surface  $\alpha/\epsilon$  values were also used for calculating the EOM in-flight LDEF temperatures. Table 4 gives the surface optical properties used for the first and last years of the LDEF mission temperature analysis.

## Contamination

Values obtained from the measurement of the thermo-optical properties for the LDEF external surfaces indicated the presence of contamination on the thermal control coatings. The effects of the contaminant layer on the LDEF clear anodized aluminum surfaces appeared stronger at locations opposite to the LDEF velocity vector, while the surfaces on the velocity vector showed the least amount of degradation from the nominal thermo-optical properties. The degraded  $\alpha/\epsilon$  values used for the surface coatings were those measured during the LDEF disassembly. As the bulk of the outgassing contamination occurred during the beginning of the LDEF mission, it was assumed that the leading edge (Row 9) coatings had the same contamination effects as the trailing edge (Row 3). This assessment is consistent with results from the experiment S0010. The experiment S0010 included an Experiment Exposure Control Canister (EECC), located on the leading edge of the LDEF. The EECC opened shortly after deployment and closed after 10 months in orbit as programmed. The opening of the EECC by the principal investigator showed the hardware inside the canister to have contamination similar to that of the trailing edge of the facility, although the post-flight leading edge exposed surfaces'  $\alpha/\epsilon$  showed less effects from contamination than those on the trailing edge. The  $\alpha/\epsilon$  difference between the leading and trailing edge can be attributed to the cleaning effect occurring on the leading edge surfaces exposed to atomic oxygen (AO) impinging flux. The amount of AO rises sharply at lower orbit altitudes and also with increased solar activity such as experienced by the LDEF during the last year of the mission. The post-flight end of mission thermal analysis takes into account the effects of this varying contamination on the external surfaces by using the measured  $\alpha/\epsilon$  values taken directly from the facility at disassembly.

## RESULTS and RECOMMENDATIONS

Shown in Figures 41 - 47 are the comparisons of THERM system temperature sensors to the post-flight thermal model. The flight data shown in each plot are the daily average temperatures for that location. Data scans were taken 12 - 13 times a day and the data for each day were averaged into one temperature for that day. This allowed a direct comparison to be made against the steady-state thermal model temperature calculations.

A direct comparison of calculated versus measured values was done for each sensor location. The locations with the smallest model error were at the center ring, reference thermistor, and the space end which all had a standard deviation ( $3\sigma$ ) of  $\pm 9^\circ\text{F}$ . The earth end and the row 6 longeron had the next lowest deviation of  $\pm 12^\circ\text{F}$ . The radiometer had the second largest  $3\sigma$  T/C error of  $\pm 15^\circ\text{F}$ . A maximum uncertainty between the calculated and measured values of  $\pm 18^\circ\text{F}$  was obtained at the damper dome location. The curves also show the maximum calculated temperature uncertainties occurred toward the end of the thermal analysis. The LDEF TMM assumed fully degraded  $\alpha/\epsilon$  values by the end of the 390 days of the THERM data period. It is likely that the fully degraded surface property values were achieved after the THERM ceased operation, thus the diversion between the calculated and measured temperatures as seen at the end of the data period on all data figures. As the contamination effects were highly variable during the course of the first part of the LDEF mission, it was difficult to extrapolate the degradation curve for the affected coatings. A longer operation of the THERM system into the second year of the LDEF mission would have enabled an improved characterization of the contamination effects and a better agreement between the calculated and measured temperatures towards the end of the data period. The  $3\sigma$  uncertainties (Table 5) are no greater than  $\pm 18^\circ\text{F}$  for any of the THERM temperature

sensor locations, thus achieving the desired reduction of calculated temperature uncertainties to under  $\pm 20^{\circ}\text{F}$ . Given in Table 6 are the temperature range comparisons between the design limits, measured temperatures, and the post-flight calculated temperatures for the T/C locations.

The maximum and minimum per orbit temperatures achieved for the extreme beta angle cases  $+52^{\circ}$ ,  $-52^{\circ}$ , and  $0^{\circ}$  along with the nodal temperature limits indexed by node number are summarized in Table 7. Table 8 summarizes the maximum and minimum daily average temperature results obtained for the first and last 390 days of the LDEF mission. Appendix A contains the orbital thermal heat flux data for each row from  $-52^{\circ}$  to  $+52^{\circ}$  in  $10^{\circ}$  increments. The daily average heat flux for the first year of flight versus MET for each row are given in Appendix B. Appendices C and D contain the daily average temperatures versus MET for the first and last 390 days. Given in Appendix E are the per orbit transient temperature profiles versus orbit time for the extreme beta angle cases of  $\pm 52^{\circ}$  and  $0^{\circ}$ .

T/E nodes are 2, 3, or 4 node lumped parameter representations of detailed experiment thermal models of up to 80 nodes, describing in some cases very complex hardware configurations. Listed temperatures for the T/E nodes should not be construed as actual component temperatures. In order to obtain T/E component temperatures, the detailed thermal models have to be updated with the temperature and incidence heat flux boundary conditions presented in this report.

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**Table 1. LDEF Pre-Flight Tray/Experiment Thermal Environment Design Limits.**

Description	Minimum °F	Maximum °F
Structure Temperature	-10	150
Internal Average Temperature	10	120
Space End Structure Temperature	30	135
Earth End Structure Temperature	10	135
Internal Emissivity	.90	.90
Solar Radiation: 408 - 451 Btu/Hr-ft <sup>2</sup> Albedo: 30-45 % Earth Radiation: 72.9 - 77.4 Btu/Hr-ft <sup>2</sup> Space Sink Temperature: 0°R		

**Table 2. LDEF Row Min/Max Solar Incidence Flux Exposures.**

$\beta$	Min Orbital Sun Exposure	Max Orbital Sun Exposure
+52°	4,5,6,7,8,9,EE,SE	1,2,10,11,12
-52°	1,2,3,10,11,12,EE,S	4,5,6,7,8
0°		EE,SE
10°		3
-10°		9

EE - Earth end, SE - space end

**Table 3. LDEF Updated Thermal Environment for Post-Flight Analysis.**

Solar Radiation: 434 Btu/Hr-ft <sup>2</sup> Albedo: 31 % Earth Radiation: 77 Btu/Hr-ft <sup>2</sup> Space Sink Temperature: 0°R
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Table 4. LDEF Thermal Model Node Description.

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
1	312.0	3" Tray-A0175	A1	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.367	.215	1.71
2	380.0	12" Tray-A0178	A2	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.356	.157	2.27
3	360.0	12" Tray-A0187	A3	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.360	.158	2.28
4	380.0	12" Tray-A0178	A4	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.355	.144	2.47
5	370.0	3" Tray-S0001	A5	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.383	.216	1.77
6	370.0	3" Tray-S0001	A6	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.365	.118	3.09
7	312.0	3" Tray-A0175	A7	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.335	.219	1.53
8	312.0	3" Tray-A0171	A8	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.228	1.56
9	360.0	12" Tray-S0069	A9	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.356	.138	2.58
10	380.0	12" Tray-A0178	A10	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.325	.147	2.21
11	312.0	3" Tray-A0187	A11	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.332	.215	1.54
12	370.0	3" Tray-S0001	A12	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.387	.220	1.76
13	370.0	6" Tray-S0001	B1	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.344	.220	1.56
14	370.0	3" Tray-S0001	B2	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.404	.238	1.70
15	360.0	12" Tray-A0138	B3	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.357	.127	2.81
16	311.0	3" Tray-A0054	B4	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.397	.233	1.70
17	380.0	12" Tray-A0178	B5	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.362	.149	2.43
18	370.0	3" Tray-S0001	B6	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.388	.183	2.12
19	380.0	12" Tray-A0178	B7	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.324	.131	2.47
20	312.0	3" Tray-S0001:A0056:A0147	B8	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.228	1.56
21	360.0	3" Tray-S0010:A0134	B9	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.354	.234	1.51
22	380.0	12" Tray-S1005	B10	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.356	.138	2.58
23	370.0	6" Tray-S0001	B11	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.344	.235	1.46
24	360.0	3" Tray-A0201	B12	6061-T6 AL	.327	.172	1.90	.361	.146	2.48	.354	.150	2.36
25	579.0	6" Tray --GRAPPLE--	C1	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.370	.190	1.95
26	360.0	6" Tray-A0015:A0187:M0006	C2	6061-T6 AL	.327	.172	1.90	.361	.146	2.48	.354	.150	2.36
27	311.0	3" Tray-A0023:A0034:A0114:A0201	C3	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.370	.149	2.48
28	370.0	3" Tray-S0001	C4	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.383	.248	1.54
29	380.0	12" Tray-A0178	C5	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.360	.128	2.81
30	380.0	12" Tray-A0178	C6	6061-T6 AL	.329	.160	2.06	.363	.134	2.72	.353	.136	2.60
31	370.0	3" Tray-S0001	C7	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.359	.218	1.65
32	380.0	12" Tray-A0178	C8	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.346	.129	2.68
33	311.0	3" Tray-A0023:A0034:A0114:A0201	C9	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.364	.140	2.60
34	579.0	6" Tray --GRAPPLE--	C10	6061-T6 AL	.327	.172	1.90	.361	.146	2.48	.367	.112	3.28
35	380.0	12" Tray-A0178	C11	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.330	.144	2.29
36	469.0	3" Tray-S0109	C12	6061-T6 AL	.327	.250	1.31	.361	.224	1.61	.354	.228	1.55
37	380.0	12" Tray-A0178	D1	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.345	.159	2.17

Table 4. LDEF Thermal Model Node Description. (Cont.)

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
38	311.0	6" Tray-A0172:A0189:S001	D2	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.364	.236	1.54
39	312.0	3" Tray-M0002:M0003	D3	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.228	1.56
40	360.0	3" Tray-M0003	D4	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.356	.150	2.37
41	380.0	12" Tray-A0178	D5	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.367	.142	2.58
42	312.0	3" Tray-A0201:S0001	D6	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.351	.224	1.57
43	380.0	12" Tray-A0178	D7	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.324	.098	3.31
44	360.0	3" Tray-M0003	D8	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.356	.150	2.37
45	312.0	3" Tray-M0002:M0003	D9	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.228	1.56
46	311.0	6" Tray-A0054	D10	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.228	1.56
47	380.0	12" Tray-A0178	D11	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.337	.143	2.36
48	311.0	3" Tray-A0019:A0023:A0180	D12	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.339	.198	1.71
49	370.0	6" Tray-S0001	E1	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.225	1.58
50	380.0	12" Tray-A0178	E2	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.354	.135	2.62
51	340.0	3" Tray-S1002	E3	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.427	.159	2.69
52	370.0	3" Tray-S0001	E4	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.355	.210	1.69
53	576.0	3" Tray-A0044:A0135:S0050	E5	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.371	.171	2.17
54	311.0	3" Tray-A0023:M0002:S1003:S1006	E6	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.361	.224	1.61
55	370.0	3" Tray-S0001	E7	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.228	1.56
56	312.0	3" Tray-A0187	E8	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.336	.206	1.63
57	360.0	12" Tray-S0014	E9	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.326	.139	2.35
58	380.0	12" Tray-A0178	E10	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.326	.131	2.49
59	370.0	6" Tray-S0001	E11	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.331	.210	1.58
60	576.0	12" Tray-A0038	E12	6061-T6 AL	.235	.800	0.29	.317	.892	0.36	.300	.680	0.44
61	370.0	3" Tray-S0001	F1	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.362	.227	1.59
62	360.0	3" Tray-P0004	F2	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.356	.150	2.37
63	370.0	3" Tray-S0001	F3	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.381	.228	1.67
64	380.0	12" Tray-A0178	F4	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.361	.151	2.39
65	370.0	3" Tray-S0001	F5	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.385	.238	1.62
66	576.0	12" Tray-A0038	F6	6061-T6 AL	.235	.800	0.29	.350	.762	0.46	.350	.762	0.46
67	370.0	3" Tray-S0001	F7	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.228	1.56
68	470.0	3" Tray-M0004	F8	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.356	.150	2.37
69	340.0	3" Tray-A0076	F9	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.337	.141	2.39
70	370.0	3" Tray-S0001	F10	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.228	1.56
71	370.0	3" Tray-S0001	F11	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.362	.219	1.65
72	360.0	12" Tray-S1001	F12	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.357	.126	2.83
73	360.0	3" Tray-S0001	G8	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.351	.233	1.51
74	246.0	12" Tray-A0139A	G6	6061-T6 AL	.322	.160	2.01	.356	.134	2.66	.339	.157	2.16

Table 4. LDEF Thermal Model Node Description. (Cont.)

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
75	360.0	6" Tray-S0001	G4	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.356	.248	1.44
76	0.0	---Blind Cover Plate---	G9	6061-T6 AL	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
77	0.0	---Blind Cover Plate---	G CT	6061-T6 AL	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
78	226.1	---Blind Cover Plate---	G3	6061-T6 AL	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
79	226.0	3" Tray-A0201	G10	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.341	.224	1.52
80	246.0	3" Tray-A0056:A0147:A0172:M0002:-	G12	6061-T6 AL	.329	.250	1.32	.363	.224	1.62	.341	.232	1.47
81	370.0	3" Tray-A0015	G2	6061-T6 AL	.327	.172	1.90	.361	.146	2.48	.351	.154	2.28
82	248.0	3" Tray-A0023:A0201:-	H11	6061-T6 AL	.329	.172	1.91	.363	.146	2.49	.394	.166	2.37
83	234.0	6" Tray-A0133	H7	6061-T6 AL	.327	.172	1.90	.361	.146	2.48	.363	.153	2.37
84	246.0	12" Tray-A0038	H6	6061-T6 AL	.280	.800	0.35	.418	.760	0.55	.418	.760	0.55
85	360.0	3" Tray-S0001	H5	6061-T6 AL	.327	.250	1.31	.361	.224	1.61	.401	.238	1.68
86	246.0	12" Tray-A0038	H9	6061-T6 AL	.280	.800	0.35	.430	.790	0.54	.430	.790	0.54
87	0.0	---BLIND COVER PLATE---	H CT	6061-T6 AL	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
88	246.0	6" TRAY-M0001	H3	6061-T6 AL	.327	.172	1.90	.361	.146	2.48	.371	.163	2.28
89	246.0	6" TRAY-M0001	H12	6061-T6 AL	.327	.172	1.90	.361	.146	2.48	.348	.170	2.05
90	246.0	12" TRAY-S1001	H1	6061-T6 AL	.365	.180	2.03	.000	.000	0.00	.392	.132	2.97
91	1511.0	Graph/Poly,Graph/Ep Mech Prop	A1	NA	.930	.930	1.00	.940	.880	1.07	.940	.880	1.07
92	1828.0	CRE-Cosmic Ray Exp	A2	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
93	1861.0	CME-Chem. of UMetereoids Exp	A3	NA	.110	.160	0.69	.150	.150	1.00	.150	.150	1.00
94	1828.0	CRE-Cosmic Ray Exp	A4	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
95	1813.0	SDE-Space Debris Exp	A5	NA	.270	.140	1.93	.320	.140	2.29	.320	.140	2.29
96	1813.0	SDE-Space Debris Exp	A6	6061-T6 AL	.250	.140	1.79	.300	.140	2.14	.300	.140	2.14
97	1545.0	Graph/Poly,Graph/Ep Mech Prop	A7	6061-T6 AL	.700	.900	0.78	.700	.900	0.78	.700	.900	0.78
98	1853.0	SAM-Solar Array Materials, Passive	A8	NA	.520	.550	0.95	.520	.500	1.04	.520	.500	1.04
99	1828.0	TCSE-Thermal Control Surf Exp	A9	NA	.100	.690	0.14	.200	.670	0.30	.200	.670	0.30
100	1828.0	CRE-Cosmic Ray Exp	A10	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
101	1856.0	CME-Chem. of UMetereoids Exp	A11	NA	.200	.040	5.00	.220	.040	5.50	.220	.040	5.50
102	1813.0	SDE-Space Debris Exp	A12	6061-T6 AL	.250	.140	1.79	.300	.130	2.31	.300	.130	2.31
103	1813.0	SDE-Space Debris Exp	B1	6061-T6 AL	.300	.130	2.31	.350	.130	2.69	.350	.130	2.69
104	1813.0	SDE-Space Debris Exp	B2	6061-T6 AL	.300	.130	2.31	.350	.130	2.69	.350	.130	2.69
105	1209.0	FRECOPA FRENCH	B3	Aluminum	.400	.150	2.67	.440	.140	3.14	.440	.140	3.14
106	1855.0	Space Plasma H-Voltage Drain Exp	B4	NA	.485	.780	0.62	.515	.770	0.67	.515	.770	0.67
107	1828.0	CRE-Cosmic Ray Exp	B5	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
108	1813.0	SDE-Space Debris Exp	B6	6061-T6 AL	.300	.150	2.00	.350	.140	2.50	.350	.140	2.50
109	1828.0	CRE-Cosmic Ray Exp	B7	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
110	1856.0	S0001:A0056:A0147	B8	NA	.370	.270	1.37	.420	.260	1.62	.420	.260	1.62
111	1827.0	Exposure of S/C Coatings: A0134	B9	NA	.470	.630	0.75	.520	.620	0.84	.520	.620	0.84

Table 4. LDEF Thermal Model Node Description. (Cont.)

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
112	1829.0	Transverse Flat Heat Pipes	B10	NA	.200	.850	0.24	.240	.840	0.29	.240	.840	0.29
113	1813.0	SDE-Space Debris Exp	B11	6061-T6 AL	.300	.140	2.14	.350	.140	2.50	.350	.140	2.50
114	1827.0	IDE-Interplanetary Dust Exp	B12	NA	.250	.391	0.64	.290	.400	0.73	.290	.382	0.76
115	1211.0	---GRAPPLE---	C1	NA	.414	.330	1.25	.444	.380	1.17	.444	.280	1.59
116	489.0	A0015:A0187:M0006	C2	NA	.290	.160	1.81	.330	.150	2.20	.330	.150	2.20
117	1856.0	A0023:A0034:A0114:A0201	C3	NA	.400	.340	1.18	.430	.290	1.48	.430	.290	1.48
118	1813.0	SDE-Space Debris Exp	C4	6061-T6 AL	.300	.130	2.31	.350	.140	2.50	.350	.120	2.92
119	1828.0	CRE-Cosmic Ray Exp	C5	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
120	1828.0	CRE-Cosmic Ray Exp	C6	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
121	1813.0	SDE-Space Debris Exp	C7	6061-T6 AL	.304	.130	2.34	.350	.130	2.69	.350	.130	2.69
122	1828.0	CRE-Cosmic Ray Exp	C8	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
123	1856.0	A0023:A0034:A0114:A0201	C9	NA	.400	.340	1.18	.430	.290	1.48	.430	.290	1.48
124	1211.0	---GRAPPLE---	C10	NA	.414	.330	1.25	.444	.380	1.17	.444	.280	1.59
125	1828.0	CRE-Cosmic Ray Exp	C11	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
126	1718.0	FO -Fiber Optics Exp	C12	NA	.470	.880	0.53	.510	.870	0.59	.510	.870	0.59
127	1828.0	CRE-Cosmic Ray Exp	D1	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
128	1234.0	A0172:A0189:S0001	D2	NA	.320	.140	2.29	.360	.130	2.77	.360	.130	2.77
129	1856.0	M0002:M0003	D3	NA	.490	.600	0.82	.530	.590	0.90	.530	.590	0.90
130	1828.0	Space Effects on S/C Mat Exp	D4	NA	.300	.610	0.49	.340	.600	0.57	.340	.600	0.57
131	1828.0	CRE-Cosmic Ray Exp	D5	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
132	1238.0	A0201:S0001	D6	NA	.350	.140	2.50	.400	.130	3.08	.400	.130	3.08
133	1828.0	CRE-Cosmic Ray Exp	D7	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
134	1828.0	Space Effects on S/C Mat Exp	D8	NA	.300	.610	0.49	.340	.600	0.57	.340	.600	0.57
135	1856.0	M0002:M0003	D9	NA	.490	.600	0.82	.530	.590	0.90	.530	.590	0.90
136	1855.0	Space Plasma H-Voltage Drain Exp	D10	NA	.485	.780	0.62	.515	.770	0.67	.515	.770	0.67
137	1828.0	CRE-Cosmic Ray Exp	D11	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
138	618.6	A0019:A0023:A0180	D12	NA	.400	.267	1.50	.440	.257	1.71	.440	.257	1.71
139	1813.0	SDE-Space Debris Exp	E1	6061-T6 AL	.290	.140	2.07	.340	.140	2.43	.340	.140	2.43
140	1828.0	CRE-Cosmic Ray Exp	E2	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
141	1832.0	DSCE-Degr of Solar Cells Exp	E3	NA	.480	.470	1.02	.520	.460	1.13	.520	.460	1.13
142	1813.0	SDE-Space Debris Exp	E4	6061-T6 AL	.310	.140	2.21	.360	.176	2.05	.360	.104	3.46
143	1612.0	A044:A0135:S0050	E5	NA	.330	.410	0.80	.364	.400	0.91	.364	.400	0.91
144	1856.0	A0023:M0002:S1003:S1006	E6	NA	.360	.480	0.75	.410	.470	0.87	.410	.470	0.87
145	1813.0	SDE-Space Debris Exp	E7	6061-T6 AL	.340	.151	2.25	.390	.151	2.58	.390	.151	2.58
146	1368.0	CME-Chem. of UMetroids Exp	E8	NA	.134	.103	1.30	.184	.133	1.38	.184	.073	2.52
147	1828.0	APEX-Advanced Photovoltaics Exp	E9	NA	.860	.830	1.04	.842	.913	0.92	.878	.747	1.18
148	1828.0	CRE-Cosmic Ray Exp	E10	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11

Table 4. LDEF Thermal Model Node Description. (Cont.)

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
149	1813.0	SDE-Space Debris Exp	E11	6061-T6 AL	.300	.160	1.88	.350	.150	2.33	.350	.150	2.33
150	1612.1	IGE-Interstellar Gas Exp	E12	NA	.200	.925	0.22	.225	.882	0.26	.225	.882	0.26
151	1813.0	SDE-Space Debris Exp	F1	6061-T6 AL	.300	.150	2.00	.350	.140	2.50	.350	.140	2.50
152	1828.0	Seeds In Space Exp	F2	6061-T6 AL	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
153	1813.0	SDE-Space Debris Exp	F3	6061-T6 AL	.310	.140	2.21	.360	.140	2.57	.360	.140	2.57
154	1828.0	CRE-Cosmic Ray Exp	F4	NA	.080	.800	0.10	.085	.800	0.11	.085	.800	0.11
155	1813.0	SDE-Space Debris Exp	F5	6061-T6 AL	.300	.130	2.31	.350	.130	2.69	.350	.130	2.69
156	1612.0	IGE-Interstellar Gas Exp	F6	NA	.235	.920	0.26	.350	.830	0.42	.350	.830	0.42
157	1813.0	SDE-Space Debris Exp	F7	6061-T6 AL	.310	.150	2.07	.360	.150	2.40	.360	.150	2.40
158	1718.0	FO -Fiber Optics Exp	F8	NA	.279	.900	0.31	.491	.890	0.55	.491	.890	0.55
159	1827.0	Cascade Variable Cond. Heat Pipe	F9	NA	.060	.500	0.12	.100	.490	0.20	.100	.490	0.20
160	1813.0	SDE-Space Debris Exp	F10	NA	.300	.130	2.31	.350	.130	2.69	.350	.130	2.69
161	1813.0	SDE-Space Debris Exp	F11	6061-T6 AL	.300	.130	2.31	.350	.130	2.69	.350	.130	2.69
162	1827.0	HEPP-Low Temperature Heat Pipe	F12	6061-T6 AL	.253	.512	0.49	.283	.410	0.69	.283	.410	0.69
163	544.0	Longeron and Intercostal	ABC12-1	6061-T6 AL	.340	.170	2.00	.373	.143	2.60	.360	.140	2.57
164	544.0	Longeron and Intercostal	ABC1-2	6061-T6 AL	.333	.170	1.96	.366	.143	2.55	.393	.140	2.81
165	544.0	Longeron and Intercostal	ABC2-3	6061-T6 AL	.360	.170	2.12	.393	.143	2.74	.430	.140	3.07
166	544.0	Longeron and Intercostal	ABC3-4	6061-T6 AL	.333	.180	1.85	.366	.153	2.39	.403	.150	2.69
167	544.0	Longeron and Intercostal	ABC4-5	6061-T6 AL	.333	.180	1.85	.366	.153	2.39	.383	.160	2.39
168	544.0	Longeron and Intercostal	ABC5-6	6061-T6 AL	.345	.200	1.73	.378	.173	2.18	.385	.190	2.03
169	544.0	Longeron and Intercostal	ABC6-7	6061-T6 AL	.340	.160	2.13	.373	.133	2.80	.360	.150	2.40
170	544.0	Longeron and Intercostal	ABC7-8	6061-T6 AL	.320	.170	1.88	.353	.143	2.46	.330	.150	2.20
171	544.0	Longeron and Intercostal	ABC8-9	6061-T6 AL	.333	.180	1.85	.366	.153	2.39	.333	.170	1.96
172	544.0	Longeron and Intercostal	ABC9-10	6061-T6 AL	.325	.180	1.81	.358	.153	2.33	.325	.140	2.32
173	544.0	Longeron and Intercostal	ABC10-11	6061-T6 AL	.320	.170	1.88	.353	.143	2.46	.360	.140	2.57
174	544.0	Longeron and Intercostal	ABC11-12	6061-T6 AL	.333	.170	1.96	.366	.143	2.55	.333	.150	2.22
175	156.0	Earth End Longeron	A12-1	6061-T6 AL	.333	.160	2.08	.366	.133	2.74	.353	.130	2.72
176	156.0	Earth End Longeron	A1-2	6061-T6 AL	.333	.190	1.75	.366	.163	2.24	.393	.170	2.31
177	156.0	Earth End Longeron	A2-3	6061-T6 AL	.345	.160	2.16	.378	.133	2.83	.415	.130	3.19
178	156.0	Earth End Longeron	A3-4	6061-T6 AL	.310	.160	1.94	.343	.133	2.57	.380	.130	2.92
179	156.0	Earth End Longeron	A4-5	6061-T6 AL	.320	.200	1.60	.353	.173	2.04	.370	.190	1.95
180	156.0	Earth End Longeron	A5-6	6061-T6 AL	.340	.180	1.89	.373	.153	2.43	.380	.170	2.24
181	156.0	Earth End Longeron	A6-7	6061-T6 AL	.340	.160	2.13	.373	.133	2.80	.360	.150	2.40
182	156.0	Earth End Longeron	A7-8	6061-T6 AL	.320	.170	1.88	.353	.143	2.46	.330	.150	2.20
183	156.0	Earth End Longeron	A8-9	6061-T6 AL	.320	.170	1.88	.353	.143	2.46	.320	.160	2.00
184	156.0	Earth End Longeron	A9-10	6061-T6 AL	.333	.160	2.08	.366	.133	2.74	.333	.130	2.56
185	156.0	Earth End Longeron	A10-11	6061-T6 AL	.333	.210	1.59	.366	.183	2.00	.373	.190	1.96

Table 4. LDEF Thermal Model Node Description. (Cont.)

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
186	156.0	Earth End Longeron	A11-12	6061-T6 AL	.333	.170	1.96	.366	.143	2.55	.333	.160	2.08
187	156.0	Space End Longeron	F12-1	6061-T6 AL	.333	.170	1.96	.366	.143	2.55	.353	.140	2.52
188	156.0	Space End Longeron	F1-2	6061-T6 AL	.310	.160	1.94	.343	.133	2.57	.350	.130	2.69
189	156.0	Space End Longeron	F2-3	6061-T6 AL	.333	.190	1.75	.366	.163	2.24	.383	.160	2.39
190	156.0	Space End Longeron	F3-4	6061-T6 AL	.310	.160	1.94	.343	.133	2.57	.370	.130	2.85
191	156.0	Space End Longeron	F4-5	6061-T6 AL	.300	.150	2.00	.333	.123	2.70	.370	.120	3.08
192	156.0	Space End Longeron	F5-6	6061-T6 AL	.320	.160	2.00	.353	.133	2.65	.370	.130	2.85
193	156.0	Space End Longeron	F6-7	6061-T6 AL	.310	.160	1.94	.343	.133	2.57	.350	.150	2.33
194	156.0	Space End Longeron	F7-8	6061-T6 AL	.333	.150	2.22	.366	.123	2.97	.343	.110	3.12
195	156.0	Space End Longeron	F8-9	6061-T6 AL	.310	.160	1.94	.343	.133	2.57	.330	.120	2.75
196	156.0	Space End Longeron	F9-10	6061-T6 AL	.320	.170	1.88	.353	.143	2.46	.330	.140	2.36
197	156.0	Space End Longeron	F10-11	6061-T6 AL	.340	.160	2.13	.373	.133	2.80	.370	.100	3.70
198	156.0	Space End Longeron	F11-12	6061-T6 AL	.333	.170	1.96	.366	.143	2.55	.343	.130	2.64
199	120.0	Earth End Structure	G CT	6061-T6 AL	.280	.110	2.55	.357	.200	1.79	.357	.020	17.85
200	188.0	Earth End Structure	G-Y+Z	6061-T6 AL	.280	.110	2.55	.357	.200	1.79	.357	.020	17.85
201	188.0	Earth End Structure	G-Y-Z	6061-T6 AL	.280	.110	2.55	.357	.200	1.79	.357	.020	17.85
202	188.0	Earth End Structure	G+Y-Z	6061-T6 AL	.280	.110	2.55	.357	.200	1.79	.357	.020	17.85
203	188.0	Earth End Structure	G+Y-Z	6061-T6 AL	.280	.110	2.55	.357	.200	1.79	.357	.020	17.85
204	2103.2	Earth End Thermal Cover	G-Y	6061-T6 AL	.850	.110	7.73	.897	.092	9.75	.897	.092	9.75
205	2103.2	Earth End Thermal Cover	G-Z	6061-T6 AL	.850	.110	7.73	.897	.089	10.08	.897	.089	10.08
206	2103.2	Earth End Thermal Cover	G+Y	6061-T6 AL	.860	.110	7.82	.907	.100	9.07	.907	.100	9.07
207	2103.2	Earth End Thermal Cover	G+Z	6061-T6 AL	.860	.110	7.82	.907	.088	10.31	.907	.088	10.31
208	120.0	Space End Structure	H CT	6061-T6 AL	.350	.110	3.18	.427	.100	4.27	.427	.100	4.27
209	188.0	Space End Structure	H-Y+Z	6061-T6 AL	.350	.110	3.18	.427	.100	4.27	.427	.100	4.27
210	188.0	Space End Structure	H-Y-Z	6061-T6 AL	.350	.110	3.18	.427	.100	4.27	.427	.100	4.27
211	188.0	Space End Structure	H Y-Z	6061-T6 AL	.350	.110	3.18	.427	.100	4.27	.427	.100	4.27
212	188.0	Space End Structure	H+Y+Z	6061-T6 AL	.350	.110	3.18	.427	.100	4.27	.427	.100	4.27
213	2103.2	Space End Thermal Cover	H-Y	6061-T6 AL	.360	.160	2.25	.389	.110	3.54	.389	.110	3.54
214	2103.2	Space End Thermal Cover	H-Z	6061-T6 AL	.360	.150	2.40	.387	.129	3.00	.387	.129	3.00
215	2103.2	Space End Thermal Cover	H+Y	6061-T6 AL	.360	.160	2.25	.387	.106	3.65	.387	.106	3.65
216	2103.2	Space End Thermal Cover	H+Z	6061-T6 AL	.360	.150	2.40	.379	.102	3.72	.379	.102	3.72
217	0.0	Center Structure Beam	CD-Y+Z	6061-T6 AL Z-306	.900	.900	1.00	.900	.900	1.00	.900	.900	1.00
218	0.0	Center Structure Beam	CD-Y-Z	6061-T6 AL Z-306	.900	.900	1.00	.900	.900	1.00	.900	.900	1.00
219	0.0	Center Structure Beam	CD+Y-Z	6061-T6 AL Z-306	.900	.900	1.00	.900	.900	1.00	.900	.900	1.00



Table 4. LDEF Thermal Model Node Description. (Cont.)

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
220	0.0	Center Structure Beam	CD+Y+Z	6061-T6 AL Z-306	.900	.900	1.00	.000	.000	0.00	.900	.900	1.00
221	534.0	Center Ring	CD1	6061-T6 AL	.363	.110	3.30	.406	.079	5.14	.406	.079	5.14
222	534.0	Center Ring	CD2	6061-T6 AL	.363	.110	3.30	.403	.060	6.72	.403	.060	6.72
223	534.0	Center Ring	CD3	6061-T6 AL	.363	.110	3.30	.403	.083	4.86	.403	.083	4.86
224	534.0	Center Ring	CD4	6061-T6 AL	.363	.110	3.30	.403	.081	4.98	.403	.081	4.98
225	534.0	Center Ring	CD5	6061-T6 AL	.363	.110	3.30	.403	.088	4.58	.403	.088	4.58
226	534.0	Center Ring	CD6	6061-T6 AL	.363	.110	3.30	.403	.069	5.84	.403	.069	5.84
227	534.0	Center Ring	CD7	6061-T6 AL	.363	.110	3.30	.403	.102	3.95	.403	.102	3.95
228	534.0	Center Ring	CD8	6061-T6 AL	.363	.110	3.30	.403	.080	5.04	.403	.080	5.04
229	534.0	Center Ring	CD9	6061-T6 AL	.363	.110	3.30	.402	.071	5.66	.402	.071	5.66
230	534.0	Center Ring	CD10	6061-T6 AL	.363	.110	3.30	.403	.088	4.58	.403	.088	4.58
231	534.0	Center Ring	CD11	6061-T6 AL	.363	.110	3.30	.404	.093	4.34	.404	.093	4.34
232	534.0	Center Ring	CD12	6061-T6 AL	.363	.110	3.30	.403	.093	4.33	.403	.093	4.33
233	0.0	***DUMMY***	****	*	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
234	0.0	Shroud - Magnetic Damper	H CT	Fiberglass	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
235	0.0	Magnetic Damper	H CT	NA	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
236	0.0	Battery Box (A0139-A)	G CT	NA	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
237	0.0	Initiate System	CD-Z	NA	.000	.000	0.00	.000	.000	0.00	.000	.000	0.00
238	136.4	Main Trunnion	CD3	PH Steel	.400	.080	5.00	.400	.080	5.00	.400	.080	5.00
239	136.4	Main Trunnion	CD9	PH Steel	.400	.080	5.00	.400	.080	5.00	.400	.080	5.00
240	544.0	Longeron and Intercoastal	DEF12-1	6061-T6 AL	.333	.170	1.96	.366	.143	2.55	.353	.130	2.72
241	544.0	Longeron and Intercoastal	DEF1-2	6061-T6 AL	.333	.180	1.85	.366	.153	2.39	.373	.150	2.49
242	544.0	Longeron and Intercoastal	DEF2-3	6061-T6 AL	.333	.200	1.67	.366	.173	2.11	.383	.170	2.25
243	544.0	Longeron and Intercoastal	DEF3-4	6061-T6 AL	.333	.170	1.96	.366	.143	2.55	.393	.150	2.62
244	544.0	Longeron and Intercoastal	DEF4-5	6061-T6 AL	.300	.180	1.67	.333	.153	2.17	.370	.150	2.47
245	544.0	Longeron and Intercoastal	DEF5-6	6061-T6 AL	.320	.160	2.00	.353	.133	2.65	.370	.130	2.85
246	544.0	Longeron and Intercoastal	DEF6-7	6061-T6 AL	.320	.170	1.88	.353	.143	2.46	.360	.160	2.25
247	544.0	Longeron and Intercoastal	DEF7-8	6061-T6 AL	.333	.170	1.96	.366	.143	2.55	.343	.140	2.45
248	544.0	Longeron and Intercoastal	DEF8-9	6061-T6 AL	.320	.170	1.88	.353	.143	2.46	.340	.140	2.43
249	544.0	Longeron and Intercoastal	DEF9-10	6061-T6 AL	.320	.170	1.88	.353	.143	2.46	.330	.140	2.36
250	544.0	Longeron and Intercoastal	DEF10-11	6061-T6 AL	.320	.180	1.78	.353	.153	2.30	.350	.120	2.92
251	544.0	Longeron and Intercoastal	DEF11-12	6061-T6 AL	.333	.180	1.85	.366	.153	2.39	.343	.150	2.29
252	819.0	Biostack	G2	NA	.321	.300	1.07	.400	.502	0.80	.400	.098	4.08
253	812.0	SDE-Space Debris Exp	G8	6061-T6 AL	.300	.060	5.00	.370	.040	9.25	.370	.040	9.25
254	1030.0	A0139A	G6	NA	.201	.905	0.22	.242	.905	0.27	.242	.905	0.27
255	812.0	SDE-Space Debris Exp	G4	6061-T6 AL	.300	.060	5.00	.370	.040	9.25	.370	.040	9.25



Table 4. LDEF Thermal Model Node Description. (Cont.)

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
256	1440.0	---Blind Cover Plate---	G9	6061-T6 AL	.293	.157	1.87	.320	.135	2.37	.320	.135	2.37
257	1500.0	---Blind Cover Plate---	G CT	6061-T6 AL	.240	.100	2.40	.262	.080	3.28	.262	.080	3.28
258	1440.0	---Blind Cover Plate---	G3	6061-T6 AL	.301	.196	1.54	.328	.174	1.89	.328	.174	1.89
259	943.0	IDE-Interplanetary Dust Exp	G10	NA	.340	.540	0.63	.380	.530	0.72	.380	.530	0.72
260	516.0	A0056:A0147:A0172:M0002	G12	NA	.300	.600	0.50	.340	.590	0.58	.340	.590	0.58
261	944.0	HEPP-Low Temperature Heat Pipe	H1	NA	.450	.723	0.62	.500	.713	0.70	.500	.713	0.70
262	941.0	A0023:A0201	H11	NA	.675	.390	1.73	.720	.360	2.00	.720	.360	2.00
263	820.0	Metal Dielectrics/Composites	H7	NA	.935	.795	1.18	.970	.790	1.23	.970	.790	1.23
264	1030.0	IGE-Interstellar Gas Exp	H6	NA	.230	.915	0.25	.350	.880	0.40	.350	.880	0.40
265	812.0	SDE-Space Debris Exp	H5	NA	.480	.060	8.00	.520	.040	13	.520	.040	13
266	1030.0	IGE-Interstellar Gas Exp	H9	NA	.230	.915	0.25	.350	.800	0.44	.350	.800	0.44
267	1600.0	Blind Cover Plate	HCT	6061-T6 AL	.290	.080	3.63	.330	.050	6.60	.330	.050	6.60
268	998.2	HIS-Heavy Ion in Space	H3	6061-T6 AL	.262	.864	0.30	.357	.860	0.42	.357	.860	0.42
269	998.2	HIS-Heavy Ion in Space	H12	6061-T6 AL	.262	.864	0.30	.357	.860	0.42	.357	.860	0.42
270	189.0	Keel	CD6	PH Steel	.400	.080	5.00	.400	.080	5.00	.400	.080	5.00
271	366.0	Graph/Poly, Graph/Ep Mech Prop (2)	A1	NA	.360	.210	1.71	.400	.200	2.00	.400	.200	2.00
272	314.0	Graph/Poly, Graph/Ep Mech Prop (2)	A7	NA	.190	.150	1.27	.230	.130	1.77	.230	.130	1.77
273	619.0	FRECOPA French (2)	B3	NA	.440	.790	0.56	.480	.780	0.62	.480	.780	0.62
274	397.0	--Grapple--(2)	C1	NA	.700	.850	0.82	.720	.840	0.86	.720	.840	0.86
275	397.0	--Grapple--(2)	C10	NA	.700	.850	0.82	.720	.840	0.86	.720	.840	0.86
276	1339.0	:A0015:A0187:M0006 (2)	C2	NA	.340	.440	0.77	.380	.430	0.88	.380	.430	0.88
277	308.0	:A0172:A0189:S0001 (2)	D2	NA	.350	.370	0.95	.390	.360	1.08	.390	.360	1.08
278	308.0	:A0172:A0189:S0001 (3)	D2	NA	.370	.870	0.43	.410	.860	0.48	.410	.860	0.48
279	618.0	:A0201:S0001 (2)	D6	NA	.316	.486	0.65	.356	.476	0.75	.356	.476	0.75
280	308.0	:A0019:A0023:A0180 (2)	D12	NA	.320	.310	1.03	.360	.300	1.20	.360	.300	1.20
281	928.0	:A0019:A0023:A0180 (3)	D12	NA	.580	.570	1.02	.620	.560	1.11	.620	.560	1.11
282	115.0	Metal Dielectrics/Composites (2)	H7	NA	.960	.790	1.22	.980	.780	1.26	.980	.780	1.26
283	258.0	:A0056:A0147:A0172:M0002 (2)	G12	NA	.520	.350	1.49	.560	.340	1.65	.560	.340	1.65
284	258.0	:A0056:A0147:A0172:M0002 (3)	G12	NA	.350	.700	0.50	.390	.690	0.57	.390	.690	0.57
285	399.0	Scuff Plate, Main	CD3	Aluminum	.500	.850	0.59	.500	.850	0.59	.500	.850	0.59
286	399.0	Scuff Plate, Main	CD9	Aluminum	.500	.850	0.59	.500	.850	0.59	.500	.850	0.59
287	856.6	End Support Beam (1 OF 3)	G3	Aluminum	.200	.060	3.33	.200	.060	3.33	.200	.060	3.33
288	1689.8	End Support Beam (2 OF 3)	G CT	Aluminum	.200	.060	3.33	.200	.060	3.33	.200	.060	3.33
289	478.8	End Scuff Plate	G3	Aluminum	.500	.850	0.59	.500	.850	0.59	.500	.850	0.59
290	136.4	End Trunnion Pin	G3	PH Steel	.400	.080	5.00	.400	.080	5.00	.400	.080	5.00
291	856.6	End Support Beam (3 OF 3)	G9	Aluminum	.200	.050	4.00	.200	.060	3.33	.200	.040	5.00
292	478.8	End Scuff Plate	G9	Aluminum	.500	.850	0.59	.500	.850	0.59	.500	.850	0.59

Table 4. LDEF Thermal Model Node Description. (Cont.)

Node	Ext Area Sq In	Description	Location	Material	Nominal Surf			End First Year			EOM Surf		
					$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$	$\alpha$	$\epsilon$	$\alpha/\epsilon$
293	136.4	End Trunnion Pin	G9	PH Steel	.400	.110	3.64	.400	.088	4.55	.400	.088	4.55
294	243.8	Earth End Thermal Panel (Side)	ROW 1	6061-T6 AL	.860	.110	7.82	.907	.088	10.31	.907	.088	10.31
295	243.8	Earth End Thermal Panel (Side)	ROW 2	6061-T6 AL	.850	.110	7.73	.897	.092	9.75	.897	.092	9.75
296	243.8	Earth End Thermal Panel (Side)	ROW 3	6061-T6 AL	.850	.110	7.73	.897	.092	9.75	.897	.092	9.75
297	243.8	Earth End Thermal Panel (Side)	ROW 4	6061-T6 AL	.850	.110	7.73	.897	.092	9.75	.897	.092	9.75
298	243.8	Earth End Thermal Panel (Side)	ROW 5	6061-T6 AL	.850	.110	7.73	.897	.089	10.08	.897	.089	10.08
299	243.8	Earth End Thermal Panel (Side)	ROW 6	6061-T6 AL	.850	.110	7.73	.897	.089	10.08	.897	.089	10.08
300	243.8	Earth End Thermal Panel (Side)	ROW 7	6061-T6 AL	.850	.110	7.73	.897	.089	10.08	.897	.089	10.08
301	243.8	Earth End Thermal Panel (Side)	ROW 8	6061-T6 AL	.860	.110	7.82	.907	.100	9.07	.907	.100	9.07
302	243.8	Earth End Thermal Panel (Side)	ROW 9	6061-T6 AL	.860	.110	7.82	.907	.100	9.07	.907	.100	9.07
303	243.8	Earth End Thermal Panel (Side)	ROW 10	6061-T6 AL	.860	.110	7.82	.907	.100	9.07	.907	.100	9.07
304	243.8	Earth End Thermal Panel (Side)	ROW 11	6061-T6 AL	.860	.110	7.82	.907	.088	10.31	.907	.088	10.31
305	243.8	Earth End Thermal Panel (Side)	ROW 12	6061-T6 AL	.860	.110	7.82	.907	.088	10.31	.907	.088	10.31
306	243.8	Earth End Thermal Panel (Side)	ROW 1	6061-T6 AL	.360	.150	2.40	.389	.128	3.04	.389	.128	3.04
307	243.8	Earth End Thermal Panel (Side)	ROW 2	6061-T6 AL	.360	.160	2.25	.389	.137	2.84	.389	.137	2.84
308	243.8	Earth End Thermal Panel (Side)	ROW 3	6061-T6 AL	.360	.160	2.25	.389	.137	2.84	.389	.137	2.84
309	243.8	Earth End Thermal Panel (Side)	ROW 4	6061-T6 AL	.360	.160	2.25	.389	.137	2.84	.389	.137	2.84
310	243.8	Earth End Thermal Panel (Side)	ROW 5	6061-T6 AL	.360	.150	2.40	.385	.129	2.98	.385	.129	2.98
311	243.8	Earth End Thermal Panel (Side)	ROW 6	6061-T6 AL	.360	.150	2.40	.385	.129	2.98	.385	.129	2.98
312	243.8	Earth End Thermal Panel (Side)	ROW 7	6061-T6 AL	.360	.150	2.40	.385	.129	2.98	.385	.129	2.98
313	243.8	Earth End Thermal Panel (Side)	ROW 8	6061-T6 AL	.360	.160	2.25	.353	.146	2.42	.367	.146	2.51
314	243.8	Earth End Thermal Panel (Side)	ROW 9	6061-T6 AL	.360	.160	2.25	.383	.146	2.62	.383	.146	2.62
315	243.8	Earth End Thermal Panel (Side)	ROW 10	6061-T6 AL	.360	.160	2.25	.383	.146	2.62	.383	.146	2.62
316	243.8	Earth End Thermal Panel (Side)	ROW 11	6061-T6 AL	.360	.150	2.40	.389	.128	3.04	.389	.128	3.04
317	243.8	Earth End Thermal Panel (Side)	ROW 12	6061-T6 AL	.360	.150	2.40	.389	.128	3.04	.389	.128	3.04
318	0.0	Int. Stiffener Conn. Nodes 175 -> 223	EE 12	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
319	0.0	Int. Stiffener Conn. Nodes 180 -> 223	EE 6	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
320	0.0	Int. Stiffener Conn. Nodes 181 -> 229	EE 6	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
321	0.0	Int. Stiffener Conn. Nodes 186 -> 229	EE 12	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
322	0.0	Int. Stiffener Conn. Nodes 187 -> 223	SE 12	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
323	0.0	Int. Stiffener Conn. Nodes 192 -> 223	SE 6	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
324	0.0	Int. Stiffener Conn. Nodes 193 -> 229	SE 6	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
325	0.0	Int. Stiffener Conn. Nodes 198 -> 229	SE 12	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
326	0.0	Aluminum Block, Thermocouple	LG 6-7 @B3	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
327	0.0	Aluminum Block, Thermocouple	Earth End	6061-T6 AL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

**Table 5. Calculated Thermal Model Uncertainty.**

Measurement Location	Uncertainty ( $\pm$ °F) $1\sigma$	Uncertainty ( $\pm$ °F) $3\sigma$
Thermistor	3	9
Radiometer	5	15
Center Ring	3	9
Row 6 Longeron	4	12
Earth End Structure	4	12
Space End Structure	3	9
Damper Dome	6	18

**Table 6. Comparison of LDEF Temperature Ranges.**

LDEF Location	Temperature Design Limits °F	Measured (THERM) °F	Post Flight Calculated °F
Interior Average	10 - 120	52 - 89	58 - 89
Structure North/South (Rows 6/12)	-10 - 150	35 - 134	39 - 136
Structure East/West (Rows 3/9)	-10 - 150	N/A	53 - 100
Structure Earth End	10 - 135	56 - 103	57 - 104
Structure Space End	10 - 135	60 - 90	64 - 96

**Table 7. Calculated Min/Max Orbital Temperatures**

Node Number	Allowable Temperature Limits		Beta Angle 52°		Beta Angle 0°		Beta Angle -52°	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
1	-100.0	250.0	98.4	114.8	60.6	68.8	69.3	72.5
2	-50.0	142.0	76.4	80.6	59.8	63.4	67.2	68.4
3	-16.0	147.0	77.6	81.1	73.6	78.3	81.1	83.9
4	-50.0	142.0	61.9	63.6	61.8	66.0	81.0	85.2
5	-100.0	250.0	56.7	59.2	64.0	88.6	111.2	150.3
6	-100.0	250.0	57.0	59.6	58.3	68.5	121.9	157.2
7	-100.0	250.0	60.6	63.0	61.0	66.6	104.5	119.3
8	-100.0	250.0	31.0	35.0	40.5	82.5	69.8	129.5
9	-1.0	149.0	61.4	62.6	63.4	66.7	78.8	81.2
10	-50.0	142.0	70.6	73.4	60.6	63.7	70.0	71.2
11	-100.0	250.0	107.4	124.4	72.8	83.2	74.3	76.3
12	-100.0	250.0	107.2	137.2	58.7	66.3	66.0	69.1
13	-100.0	250.0	106.0	141.0	56.8	71.6	64.5	67.2
14	-100.0	250.0	89.2	128.6	64.0	93.7	65.6	68.4
15	-18.0	154.0	83.5	86.4	75.4	78.8	84.1	86.2
16	-19.0	155.0	66.7	68.3	64.9	69.1	84.2	88.6
17	-50.0	142.0	56.7	57.4	52.3	55.1	82.4	86.8
18	-100.0	250.0	55.1	57.4	52.4	61.6	115.1	153.6
19	-50.0	142.0	55.6	56.3	50.5	51.7	86.6	90.2
20	-22.0	185.0	50.2	52.2	59.7	74.7	93.3	115.4
21	-14.0	153.0	61.9	63.2	63.1	66.7	78.0	80.9
22	-8.0	140.0	74.6	76.9	62.6	65.2	72.7	73.5
23	-100.0	250.0	89.4	125.5	59.0	82.6	64.6	67.2
24	-18.0	150.0	94.8	98.0	57.7	58.6	71.0	71.8
25	-250.0	228.0	104.3	128.1	46.5	55.8	50.3	52.0
26	-15.0	145.0	89.8	94.3	65.3	68.6	64.5	65.4
27	-16.0	150.0	74.2	78.1	67.6	72.4	75.5	78.5
28	-100.0	250.0	62.3	72.7	65.4	100.4	84.2	121.2
29	-50.0	142.0	55.3	55.9	51.4	54.0	80.2	84.2
30	-50.0	142.0	53.5	54.1	47.8	49.0	88.2	91.9
31	-100.0	250.0	54.2	56.2	54.5	67.4	109.1	145.3
32	-50.0	142.0	35.8	36.4	35.3	38.6	61.0	65.8
33	-16.0	150.0	64.7	66.4	67.4	71.9	82.5	86.1
34	-250.0	228.0	70.7	92.9	58.5	80.9	59.1	65.4
35	-50.0	142.0	72.5	75.7	51.8	53.8	62.7	63.5
36	-70.0	180.0	89.5	98.9	39.7	41.9	49.8	51.1
37	-50.0	142.0	73.2	76.7	47.6	49.3	59.0	59.7
38	-50.0	200.0	75.2	112.4	54.2	82.5	52.6	55.0
39	-12.0	157.0	62.9	68.5	60.6	67.4	65.6	69.4
40	3.0	139.0	55.3	56.2	62.3	64.8	80.3	83.1
41	-50.0	142.0	49.4	50.1	50.6	53.2	79.3	83.4
42	-10.0	148.0	50.0	51.5	53.9	60.0	116.8	143.4
43	-50.0	142.0	48.7	49.3	48.5	49.6	83.9	87.3
44	3.0	139.0	49.6	50.0	58.8	60.6	87.5	90.4
45	-12.0	157.0	54.6	57.2	60.2	66.5	74.0	79.2
46	-19.0	155.0	71.5	74.9	63.7	67.1	70.3	71.1
47	-50.0	142.0	67.8	71.0	50.3	52.2	59.9	60.7
48	-19.0	153.0	103.2	119.3	42.1	45.3	48.4	49.8
49	-100.0	250.0	97.0	131.6	52.4	67.1	56.9	59.7
50	-50.0	142.0	62.7	66.9	51.9	55.0	59.5	60.5

**Table 7. Calculated Min/Max Orbital Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		Beta Angle 52°		Beta Angle 0°		Beta Angle -52°	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
51	-5.0	150.0	66.4	69.7	66.9	70.9	69.9	72.3
52	-100.0	250.0	54.3	65.4	62.8	99.2	79.5	118.2
53	-100.0	150.0	36.8	38.4	52.0	61.0	95.7	111.1
54	-53.0	144.0	35.4	36.8	40.8	43.3	103.7	112.3
55	-100.0	250.0	46.2	48.9	52.9	67.0	106.1	145.9
56	-50.0	250.0	53.2	55.0	62.9	68.3	90.3	98.7
57	-5.0	138.0	54.8	56.6	63.1	67.0	76.2	79.4
58	-50.0	142.0	58.6	61.4	53.8	56.5	62.2	62.9
59	-100.0	250.0	80.6	116.9	55.5	78.9	57.2	59.8
60	-12.0	142.0	44.3	51.6	13.7	15.6	21.5	22.8
61	-100.0	250.0	103.0	139.1	58.6	75.1	57.3	60.8
62	0.0	90.0	62.9	66.9	52.4	55.6	52.2	53.0
63	-100.0	250.0	66.0	97.6	70.1	110.9	70.5	91.4
64	-50.0	142.0	51.2	53.3	60.8	65.7	73.8	78.7
65	-100.0	250.0	44.4	47.8	62.8	90.0	104.7	147.1
66	-16.0	142.0	4.2	12.7	12.7	34.7	48.9	102.6
67	-100.0	250.0	40.7	44.0	55.0	67.9	106.1	143.4
68	-2.0	138.0	37.9	38.7	58.3	61.1	84.9	89.2
69	-14.0	150.0	62.9	66.5	70.1	77.7	80.6	86.0
70	-100.0	250.0	71.4	102.7	69.0	102.2	67.1	76.6
71	-100.0	250.0	88.1	124.4	65.6	88.5	60.5	64.0
72	-1.0	112.0	88.8	92.7	68.3	71.0	71.1	72.9
73	-100.0	250.0	65.9	69.2	68.8	76.4	96.9	102.1
74	-10.0	143.0	56.3	57.3	55.2	56.8	79.5	81.6
75	-100.0	250.0	70.1	73.2	71.8	78.2	96.0	99.9
77	-150.0	300.0	73.0	74.2	63.9	65.4	79.8	81.0
79	-10.0	150.0	80.0	81.9	64.8	67.2	73.4	74.8
80	-22.0	185.0	72.0	75.0	57.9	62.2	66.4	68.9
81	-4.0	104.0	81.3	83.4	64.2	66.8	71.7	73.5
82	-13.0	154.0	73.3	86.2	82.6	103.1	72.1	84.4
83	-10.0	146.0	48.8	52.3	70.3	76.4	81.0	85.4
84	-8.0	142.0	17.0	20.7	37.0	45.4	45.5	51.0
85	-100.0	250.0	61.9	82.1	80.9	115.6	87.7	109.1
86	-8.0	142.0	24.2	28.3	40.1	48.8	40.2	45.5
87	-50.0	200.0	69.4	95.3	89.1	135.3	83.9	112.6
88	-39.0	123.0	62.8	63.3	72.8	73.7	75.1	75.7
89	-39.0	123.0	68.4	69.0	71.3	72.4	68.0	68.7
90	28.0	196.0	73.9	76.0	67.8	69.1	68.5	69.4
91	-125.0	250.0	-70.0	245.0	-99.1	97.5	-109.1	-71.0
92	-100.0	54.0	-51.6	4.0	-60.6	-11.5	-57.8	-54.6
93	-50.0	150.0	58.6	66.5	63.5	75.3	56.1	62.0
94	-100.0	54.0	-60.0	-40.7	-59.5	-1.5	-50.5	0.6
95	-100.0	250.0	56.2	59.5	63.3	96.6	110.6	160.4
96	-100.0	250.0	56.9	60.4	56.9	70.4	117.7	165.3
97	-125.0	250.0	-109.0	-87.5	-97.0	32.4	-47.1	197.7
98	-90.0	245.0	30.3	34.3	39.7	82.7	68.9	130.2
99	-100.0	250.0	-36.8	-25.9	-23.3	13.8	-16.9	13.1
100	-100.0	54.0	-56.1	-7.0	-60.7	-5.9	-56.4	-37.9
101	-100.0	250.0	109.8	141.9	73.0	94.3	72.9	74.6
102	-100.0	250.0	103.8	142.3	57.1	66.9	65.9	69.7

**Table 7. Calculated Min/Max Orbital Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		Beta Angle 52°		Beta Angle 0°		Beta Angle -52°	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
103	-100.0	250.0	103.9	152.1	56.4	76.7	64.7	68.3
104	-100.0	250.0	88.1	139.6	63.9	104.8	65.2	68.9
105	-25.0	230.0	118.8	152.5	128.4	170.7	86.9	107.5
106	-90.0	214.0	-67.8	-26.7	-37.8	97.2	-30.1	107.7
107	-100.0	54.0	-62.7	-59.7	-64.3	-21.3	-48.9	9.6
108	-100.0	250.0	54.8	57.8	51.1	63.4	112.0	164.1
109	-100.0	54.0	-63.2	-60.2	-65.6	-42.1	-47.8	7.7
110	-22.0	194.0	29.6	33.1	44.9	104.8	80.2	165.2
111	-68.0	111.0	-6.8	10.0	25.8	62.8	27.2	58.5
112	-117.0	124.0	-45.0	-14.2	-48.9	-14.9	-67.3	-56.8
113	-100.0	250.0	87.1	134.4	57.5	89.3	64.2	67.5
114	-96.0	185.0	79.4	122.4	-45.2	-35.3	-63.9	-61.5
115	-150.0	250.0	100.2	136.3	40.2	54.0	43.4	45.7
116	38.0	173.0	106.7	118.6	71.1	80.1	51.8	52.6
117	-47.0	181.0	49.0	83.6	55.7	97.0	32.5	54.3
118	-100.0	250.0	61.8	76.1	64.6	113.9	82.4	132.4
119	-100.0	54.0	-63.4	-60.4	-64.7	-21.7	-50.1	8.7
120	-100.0	54.0	-64.2	-61.2	-66.7	-52.7	-46.8	6.5
121	-100.0	250.0	54.3	57.1	53.0	70.9	106.1	155.1
122	-100.0	54.0	-7.9	-6.8	-8.2	11.2	9.1	32.8
123	-47.0	181.0	23.0	44.7	59.8	106.2	61.7	101.1
124	-150.0	250.0	63.7	96.3	51.4	84.5	51.2	60.8
125	-100.0	54.0	-54.9	2.2	-64.9	-24.6	-59.9	-56.8
126	-68.0	143.0	37.1	112.6	-28.1	-10.3	-28.0	-23.7
127	-100.0	54.0	-53.7	2.2	-66.6	-41.7	-61.7	-58.5
128	-100.0	250.0	75.7	116.7	54.1	85.3	51.9	54.4
129	-93.0	245.0	17.6	75.6	21.4	93.7	3.6	38.7
130	-100.0	250.0	-37.4	-23.4	-6.0	44.7	6.2	58.8
131	-100.0	54.0	-66.1	-63.0	-65.1	-22.0	-50.5	8.5
132	-100.0	250.0	48.9	50.5	53.3	60.7	117.8	152.5
133	-100.0	54.0	-66.4	-63.3	-66.5	-42.9	-49.1	6.8
134	-100.0	250.0	-54.6	-52.0	-16.0	24.7	20.6	79.2
135	-93.0	145.0	-5.5	27.4	16.1	86.0	19.8	79.0
136	-90.0	214.0	-41.9	85.6	-48.8	81.4	-72.1	-28.5
137	-100.0	54.0	-57.0	0.6	-65.6	-25.1	-61.2	-58.1
138	-40.0	181.0	102.8	125.7	39.3	44.6	45.2	46.5
139	-100.0	250.0	94.8	142.0	51.8	71.8	57.0	60.6
140	-100.0	54.0	-57.9	-0.5	-64.4	-14.4	-61.4	-58.1
141	-196.0	225.0	35.9	86.7	42.4	105.4	17.7	48.3
142	-100.0	250.0	53.9	68.8	62.1	112.8	77.8	129.4
143	-99.0	150.0	21.5	22.8	41.7	59.9	93.7	123.5
144	-56.0	177.0	-3.7	-1.5	6.8	17.3	98.8	150.4
145	-100.0	250.0	46.1	49.6	51.6	71.0	103.7	157.5
146	-100.0	311.0	40.2	40.8	62.0	75.1	97.1	116.1
147	-87.0	194.0	-6.2	39.0	13.2	101.1	16.6	91.8
148	-100.0	54.0	-61.7	-11.2	-63.9	-8.2	-60.2	-40.5
149	-100.0	250.0	77.5	125.1	53.6	85.1	56.4	59.8
150	-100.0	94.0	19.8	42.4	-8.4	-3.3	-2.5	-1.4
151	-100.0	250.0	101.1	150.6	57.6	79.8	56.7	61.1
152	-50.0	100.0	-36.1	9.8	-42.1	-2.2	-42.6	-40.0

**Table 7. Calculated Min/Max Orbital Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		Beta Angle 52°		Beta Angle 0°		Beta Angle -52°	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
153	-100.0	250.0	65.2	106.7	69.7	125.4	70.0	97.6
154	-100.0	54.0	-64.9	-44.9	-59.9	-1.7	-53.8	-1.7
155	-100.0	250.0	43.9	48.3	62.4	99.6	105.2	160.3
156	-100.0	100.0	-10.4	-3.7	-1.7	21.8	34.3	104.4
157	-100.0	250.0	40.0	44.2	53.2	70.8	103.1	152.4
158	-69.0	178.0	-52.5	-49.4	-23.9	41.1	2.7	90.5
159	-100.0	100.0	-105.1	-102.5	-71.2	-63.3	-75.4	-68.9
160	-100.0	250.0	68.9	110.1	66.9	111.7	66.0	79.3
161	-100.0	250.0	85.8	133.3	63.9	95.1	60.0	64.4
162	-50.0	150.0	21.1	106.9	-55.5	-34.4	-69.5	-64.3
163	10.0	130.0	105.8	113.0	57.3	59.3	65.7	66.7
164	10.0	130.0	101.4	110.2	62.9	67.8	66.2	67.2
165	10.0	130.0	87.4	94.8	70.4	77.4	73.0	75.2
166	10.0	130.0	71.3	75.1	70.8	77.8	85.4	91.1
167	10.0	130.0	63.9	65.2	66.5	72.5	94.4	102.2
168	10.0	130.0	57.5	58.1	58.7	62.3	114.0	122.7
169	10.0	130.0	59.0	59.7	58.9	60.6	118.8	127.1
170	10.0	130.0	53.8	54.5	60.0	64.0	103.5	111.5
171	10.0	130.0	58.4	59.5	64.2	70.0	88.1	94.8
172	10.0	130.0	71.2	75.3	66.7	72.7	76.6	79.9
173	10.0	130.0	88.3	95.0	66.5	71.9	69.6	70.4
174	10.0	130.0	100.3	107.3	60.4	63.5	67.6	68.5
175	10.0	130.0	122.9	131.5	68.7	71.9	71.0	72.1
176	10.0	130.0	106.9	115.2	68.8	73.7	69.6	70.3
177	10.0	130.0	94.7	102.9	80.1	88.1	78.7	81.2
178	10.0	130.0	77.8	82.2	82.0	90.1	94.5	100.7
179	10.0	130.0	62.7	64.1	74.7	81.4	113.6	122.8
180	10.0	130.0	60.8	61.8	71.7	76.9	135.5	145.8
181	10.0	130.0	61.0	62.0	69.2	71.7	135.9	144.7
182	10.0	130.0	53.0	53.9	67.0	72.5	114.6	124.9
183	10.0	130.0	56.9	58.6	73.0	81.5	101.7	112.0
184	10.0	130.0	80.8	86.4	79.4	87.2	85.7	90.1
185	10.0	130.0	105.5	113.1	76.8	82.7	73.9	74.9
186	10.0	130.0	123.7	131.9	74.3	78.3	72.5	73.6
187	10.0	130.0	110.0	121.0	72.8	80.5	64.7	69.0
188	10.0	130.0	95.7	106.4	67.5	74.3	61.0	62.6
189	10.0	130.0	76.5	88.6	75.8	89.6	69.3	75.5
190	10.0	130.0	68.2	76.5	82.3	96.3	82.8	92.9
191	10.0	130.0	52.7	55.1	76.1	84.9	104.2	115.4
192	10.0	130.0	42.6	47.1	67.3	77.3	113.0	126.7
193	10.0	130.0	39.8	44.2	62.6	70.6	116.7	129.3
194	10.0	130.0	43.4	44.9	66.6	71.2	108.3	117.8
195	10.0	130.0	55.7	60.3	74.9	84.9	89.7	98.6
196	10.0	130.0	73.8	81.6	81.8	93.7	79.8	86.1
197	10.0	130.0	93.6	104.3	81.4	89.8	69.3	71.0
198	10.0	130.0	104.7	113.9	78.2	85.1	66.5	70.5
199	30.0	120.0	71.7	72.8	63.0	64.9	78.5	79.7
200	30.0	120.0	87.3	90.8	67.1	70.1	74.3	75.7
201	30.0	120.0	69.5	71.2	71.8	75.8	98.1	102.3
202	30.0	120.0	65.0	66.5	69.1	72.8	100.4	104.4

**Table 7. Calculated Min/Max Orbital Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		Beta Angle 52°		Beta Angle 0°		Beta Angle -52°	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
203	30.0	120.0	85.5	88.5	68.2	71.7	76.1	77.7
204	-100.0	300.0	100.2	140.7	95.5	156.9	101.0	139.2
205	-100.0	300.0	70.7	129.9	71.1	171.5	115.6	212.9
206	-100.0	300.0	69.2	131.2	64.9	175.9	82.5	157.8
207	-100.0	300.0	101.6	189.8	68.7	176.1	80.1	141.9
208	30.0	115.0	67.2	72.9	83.4	93.4	80.6	86.9
209	30.0	115.0	79.2	84.8	74.4	83.1	72.1	77.4
210	30.0	115.0	59.8	65.0	78.1	87.4	87.0	93.5
211	30.0	115.0	46.8	51.2	67.5	75.6	83.6	89.6
212	30.0	115.0	75.9	81.1	80.5	88.3	72.9	77.4
213	-100.0	300.0	48.5	127.6	53.5	180.4	56.8	138.8
214	-100.0	300.0	25.7	110.2	41.0	173.6	72.9	163.3
215	-100.0	300.0	43.0	126.8	51.8	186.4	61.2	148.1
216	-100.0	300.0	68.5	153.8	53.2	180.9	51.5	134.0
217	20.0	120.0	79.4	80.9	63.1	64.4	75.7	76.9
218	20.0	120.0	68.1	69.3	64.2	65.8	87.3	89.1
219	20.0	120.0	65.4	66.6	62.5	64.2	89.4	91.4
220	20.0	120.0	75.6	76.9	63.0	64.5	77.4	78.6
221	10.0	130.0	109.8	116.5	58.9	61.8	62.1	62.6
222	10.0	130.0	93.6	101.6	67.2	73.2	65.9	66.5
223	10.0	130.0	74.1	75.6	68.8	71.0	75.1	76.6
224	10.0	130.0	64.2	66.3	71.9	78.9	94.0	101.5
225	10.0	130.0	58.2	58.6	66.6	71.4	111.6	119.2
226	10.0	130.0	55.7	56.0	63.0	64.0	126.9	130.1
227	10.0	130.0	55.7	56.1	62.0	64.5	121.8	129.4
228	10.0	130.0	54.9	55.4	64.8	70.0	100.7	108.3
229	10.0	130.0	63.6	64.5	68.0	69.8	83.4	84.8
230	10.0	130.0	81.5	87.6	69.6	76.1	71.8	73.1
231	10.0	130.0	97.5	104.6	64.6	69.1	66.5	67.0
232	10.0	130.0	108.4	114.3	55.0	56.2	61.3	61.7
233	25.0	105.0	69.8	82.9	62.5	78.7	79.6	93.3
234	20.0	110.0	71.9	72.6	66.8	67.9	83.5	84.3
235	20.0	110.0	72.4	72.4	69.7	69.9	84.3	84.4
236	0.0	120.0	74.6	74.9	64.9	65.5	84.4	84.9
237	0.0	130.0	65.5	66.5	62.7	64.2	90.2	92.0
238	-100.0	150.0	57.1	59.0	48.7	51.4	48.7	51.7
239	-100.0	150.0	38.3	41.9	46.9	50.7	61.8	65.6
240	10.0	130.0	99.0	105.8	53.1	54.8	57.6	58.4
241	10.0	130.0	90.4	98.9	58.8	63.5	59.8	60.6
242	10.0	130.0	72.1	79.2	64.8	71.6	66.7	69.0
243	10.0	130.0	63.8	67.9	68.9	76.2	79.0	84.8
244	10.0	130.0	52.3	53.7	64.0	69.7	92.4	100.1
245	10.0	130.0	45.3	46.2	55.1	58.6	107.1	115.0
246	10.0	130.0	46.5	47.3	54.2	56.1	113.2	121.5
247	10.0	130.0	50.3	51.1	60.8	64.4	101.8	109.2
248	10.0	130.0	54.9	56.0	65.1	70.1	86.5	92.2
249	10.0	130.0	67.6	71.6	67.7	73.5	74.7	77.9
250	10.0	130.0	82.3	89.4	65.9	71.3	65.9	66.6
251	10.0	130.0	92.3	99.7	56.1	59.3	57.9	58.7
252	2.0	82.0	59.4	61.9	48.9	53.6	46.4	48.8



**Table 7. Calculated Min/Max Orbital Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		Beta Angle 52°		Beta Angle 0°		Beta Angle -52°	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
253	-100.0	250.0	66.5	73.9	68.2	83.5	95.7	106.6
254	-100.0	91.0	24.6	25.3	26.3	27.6	39.7	40.4
255	-100.0	250.0	70.6	77.9	71.3	85.1	95.4	105.1
256	-100.0	250.0	62.6	76.1	54.9	79.4	72.6	89.0
257	-100.0	250.0	69.7	70.9	63.0	65.7	77.0	78.6
258	-100.0	250.0	63.5	75.9	54.5	76.8	69.9	85.5
259	-100.0	200.0	23.6	30.9	23.7	36.8	19.5	26.5
260	-150.0	217.0	55.9	61.6	44.7	54.9	50.9	56.5
261	-62.0	147.0	-33.4	-18.3	15.4	42.0	-27.5	-11.3
262	-150.0	467.0	50.9	115.3	71.2	179.5	52.0	119.4
263	-100.0	250.0	1.9	74.2	35.4	153.7	13.1	87.0
264	-100.0	99.0	-4.1	10.0	15.7	46.3	22.3	40.1
265	-100.0	250.0	62.5	106.2	79.7	152.3	87.9	133.2
266	-100.0	99.0	2.5	16.5	19.3	50.0	18.2	36.5
267	-100.0	200.0	69.5	96.1	89.5	137.1	84.1	113.6
268	-44.0	78.0	-68.3	-44.2	-35.4	12.3	-58.7	-30.6
269	-44.0	78.0	-66.6	-42.5	-35.7	12.0	-60.7	-32.7
270	-20.0	130.0	54.7	55.2	65.6	70.4	129.2	132.4
271	-66.0	268.0	160.7	202.3	48.4	64.3	31.3	33.4
272	-66.0	268.0	58.7	60.5	60.4	65.3	106.3	123.9
273	-150.0	250.0	-129.4	124.3	-130.7	174.7	-130.3	72.2
274	-100.0	250.0	86.1	154.9	25.1	50.5	24.7	27.9
275	-100.0	250.0	46.1	105.7	35.5	96.2	32.8	51.6
276	-150.0	262.0	65.5	108.6	22.5	54.2	-25.7	-23.5
277	-91.0	249.0	74.6	113.8	53.0	82.6	50.7	53.0
278	-150.0	350.0	64.2	97.9	41.2	65.5	35.2	36.8
279	-150.0	234.0	-92.7	-90.8	-58.6	-49.2	99.7	146.7
280	-74.0	326.0	106.1	137.0	31.1	37.7	34.5	35.9
281	-95.0	241.0	98.8	151.5	13.1	25.3	12.4	15.3
282	-100.0	250.0	35.1	53.9	71.1	101.9	56.0	75.0
283	-20.0	181.0	67.9	73.3	56.1	65.7	62.0	67.2
284	-100.0	250.0	44.1	48.0	37.1	44.1	39.7	43.5
285	-150.0	467.0	27.8	43.3	18.0	49.0	14.2	36.5
286	-100.0	150.0	3.4	14.9	14.0	41.2	26.5	55.9
287	-100.0	150.0	70.0	70.9	52.0	53.0	70.3	71.6
288	-100.0	150.0	75.3	76.3	57.8	58.9	77.9	78.8
289	-100.0	150.0	5.9	22.9	-2.8	26.0	-8.2	12.4
290	-100.0	150.0	35.4	38.9	18.0	20.5	18.6	22.9
291	-100.0	150.0	71.2	72.5	52.5	53.8	73.7	74.7
292	-100.0	150.0	-12.3	-0.1	-10.3	16.4	1.7	30.7
293	-100.0	150.0	18.8	23.3	14.8	18.5	32.3	36.2
294	-100.0	300.0	105.2	333.2	64.5	194.4	69.6	97.6
295	-100.0	300.0	97.3	322.4	74.0	286.0	75.6	95.4
296	-100.0	300.0	92.2	237.7	88.4	289.9	93.8	195.6
297	-100.0	300.0	73.0	164.9	75.4	318.7	89.2	306.4
298	-100.0	300.0	60.3	86.9	68.1	262.2	116.9	350.4
299	-100.0	300.0	67.2	110.3	69.8	175.0	122.0	318.8
300	-100.0	300.0	59.0	85.4	64.3	167.5	113.4	332.9
301	-100.0	300.0	57.0	87.7	61.5	259.5	86.3	324.2
302	-100.0	300.0	67.7	168.6	65.7	257.1	83.3	237.2

**Table 7. Calculated Min/Max Orbital Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		Beta Angle 52°		Beta Angle 0°		Beta Angle -52°	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
303	-100.0	300.0	70.2	281.9	63.2	292.4	74.2	164.1
304	-100.0	300.0	112.5	379.8	68.8	267.9	68.5	98.3
305	-100.0	300.0	100.8	268.9	67.5	148.7	76.5	118.2
306	-100.0	300.0	84.9	172.6	59.2	111.2	55.3	74.2
307	-100.0	300.0	72.3	159.4	60.4	144.9	57.4	76.0
308	-100.0	300.0	55.0	132.3	61.6	173.7	60.8	123.9
309	-100.0	300.0	51.5	88.2	65.6	162.0	76.6	159.3
310	-100.0	300.0	39.9	57.8	59.2	133.6	93.0	184.7
311	-100.0	300.0	29.5	71.4	49.2	124.5	90.8	183.6
312	-100.0	300.0	35.5	53.6	54.5	88.0	92.5	172.9
313	-100.0	300.0	42.3	61.4	58.4	118.0	79.8	155.2
314	-100.0	300.0	49.3	91.8	60.2	135.0	67.2	122.5
315	-100.0	300.0	65.9	133.4	65.7	141.1	64.2	89.5
316	-100.0	300.0	72.7	173.0	61.2	130.2	55.0	79.1
317	-100.0	300.0	82.5	166.8	61.1	127.1	53.4	95.2
318	30.0	120.0	51.3	52.0	81.0	81.2	71.6	71.6
319	30.0	120.0	50.5	50.8	75.0	75.1	93.7	93.9
320	30.0	120.0	50.4	50.6	72.3	72.4	94.5	94.7
321	30.0	120.0	51.3	52.0	82.6	82.7	74.8	74.8
322	30.0	120.0	51.2	51.8	82.8	82.9	72.3	72.3
323	30.0	120.0	50.3	50.4	73.3	73.4	87.6	87.7
324	30.0	120.0	50.1	50.2	69.5	69.6	89.0	89.2
325	30.0	120.0	51.1	51.6	83.0	83.1	75.4	75.4
326	10.0	130.0	55.1	57.4	52.4	61.6	115.1	153.6
327	30.0	120.0	65.9	69.2	68.8	76.4	96.9	102.1

**Table 8. Calculated Min/Max Daily Averaged Temperatures.**

Node Number	Allowable Temperature Limits		First Year 4/7/84 - 5/13/85		End of Mission 12/20/88 - 1/12/90	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
1	-100.0	250.0	48.10	109.40	58.00	115.30
2	-50.0	142.0	48.70	86.90	59.90	90.50
3	-16.0	147.0	62.80	92.70	77.10	93.50
4	-50.0	142.0	52.20	85.50	64.70	83.80
5	-100.0	250.0	52.40	127.70	62.00	124.60
6	-100.0	250.0	45.20	140.80	56.80	139.00
7	-100.0	250.0	48.70	115.20	60.00	111.80
8	-100.0	250.0	33.50	104.10	45.00	103.70
9	-1.0	149.0	52.80	83.20	65.00	80.00
10	-50.0	142.0	50.60	82.50	61.10	82.70
11	-100.0	250.0	61.20	120.80	67.80	127.30
12	-100.0	250.0	45.00	129.50	55.80	139.00
13	-100.0	250.0	43.80	124.00	51.40	132.40
14	-100.0	250.0	57.80	112.20	61.90	116.80
15	-18.0	154.0	63.60	95.60	75.20	95.50
16	-19.0	155.0	54.50	88.20	65.30	84.50
17	-50.0	142.0	40.70	85.70	50.90	81.90
18	-100.0	250.0	38.70	135.80	49.10	128.80
19	-50.0	142.0	37.90	90.10	48.10	85.50
20	-22.0	185.0	48.40	107.20	58.90	104.70
21	-14.0	153.0	52.90	81.60	64.20	78.80
22	-8.0	140.0	50.50	85.40	60.40	84.80
23	-100.0	250.0	52.40	114.20	58.60	121.40
24	-18.0	150.0	42.60	101.40	52.40	105.00
25	-250.0	228.0	32.50	113.90	38.60	122.80
26	-15.0	145.0	50.40	99.00	58.40	101.90
27	-16.0	150.0	58.20	89.10	69.80	87.90
28	-100.0	250.0	63.50	101.20	73.20	96.70
29	-50.0	142.0	39.50	83.30	49.40	79.80
30	-50.0	142.0	34.80	91.30	43.90	86.00
31	-100.0	250.0	41.40	133.20	50.00	126.90
32	-50.0	142.0	24.40	65.30	33.70	61.40
33	-16.0	150.0	57.30	87.00	67.60	82.10
34	-250.0	228.0	56.30	91.40	59.20	89.50
35	-50.0	142.0	38.90	80.90	48.40	83.00
36	-70.0	180.0	24.40	96.80	34.10	103.20
37	-50.0	142.0	33.20	81.30	41.80	81.30
38	-50.0	200.0	46.50	97.10	49.40	99.80
39	-12.0	157.0	51.10	78.20	61.70	75.20
40	3.0	139.0	49.30	83.40	58.40	78.10
41	-50.0	142.0	37.50	82.40	46.60	78.30
42	-10.0	148.0	37.70	131.00	44.70	123.20
43	-50.0	142.0	34.30	87.20	42.70	80.80
44	3.0	139.0	43.70	90.60	51.70	83.90
45	-12.0	157.0	51.20	79.30	60.50	74.50
46	-19.0	155.0	51.30	84.30	61.00	81.60
47	-50.0	142.0	36.70	77.40	44.90	75.40
48	-19.0	153.0	25.60	112.30	27.40	109.60
49	-100.0	250.0	38.30	116.40	45.20	123.00
50	-50.0	142.0	38.60	74.20	46.90	71.20

**Table 8. Calculated Min/Max Daily Averaged Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		First Year 4/7/84 - 5/13/85		End of Mission 12/20/88 - 1/12/90	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
51	-5.0	150.0	55.10	81.10	65.80	77.00
52	-100.0	250.0	58.50	97.10	64.30	91.20
53	-100.0	150.0	33.20	102.90	41.50	99.70
54	-53.0	144.0	24.10	108.10	32.70	104.90
55	-100.0	250.0	37.70	132.30	46.30	125.50
56	-50.0	250.0	48.90	96.40	57.10	89.40
57	-5.0	138.0	54.00	79.80	59.90	73.90
58	-50.0	142.0	41.40	71.60	50.60	67.60
59	-100.0	250.0	47.40	107.40	50.70	108.20
60	-12.0	142.0	-0.50	56.20	9.20	60.40
61	-100.0	250.0	44.40	124.00	49.70	123.90
62	0.0	90.0	38.80	74.90	46.50	71.30
63	-100.0	250.0	69.90	95.60	75.10	88.00
64	-50.0	142.0	48.20	77.90	58.60	74.00
65	-100.0	250.0	43.90	122.60	52.60	119.60
66	-16.0	142.0	3.80	81.20	14.60	86.80
67	-100.0	250.0	37.80	130.90	47.20	128.40
68	-2.0	138.0	37.30	88.90	44.50	83.30
69	-14.0	150.0	59.70	86.10	68.40	79.40
70	-100.0	250.0	67.50	102.10	69.20	97.00
71	-100.0	250.0	57.10	116.30	53.60	113.10
72	-1.0	112.0	52.40	100.70	61.70	98.10
73	-100.0	250.0	58.70	100.90	72.40	100.30
74	-10.0	143.0	44.50	81.80	54.20	78.70
75	-100.0	250.0	61.50	99.40	75.90	99.00
77	-150.0	300.0	52.60	82.50	63.90	84.20
79	-10.0	150.0	53.30	88.90	64.40	91.50
80	-22.0	185.0	48.30	80.90	59.10	83.70
81	-4.0	104.0	53.80	88.90	62.40	89.70
82	-13.0	154.0	77.10	99.40	77.60	94.80
83	-10.0	146.0	52.80	85.70	59.80	81.80
84	-8.0	142.0	19.20	50.40	30.60	47.30
85	-100.0	250.0	73.70	103.30	87.20	104.80
86	-8.0	142.0	23.60	48.40	40.10	44.10
87	-50.0	200.0	83.30	113.10	91.90	100.70
88	-39.0	123.0	57.60	79.90	70.00	73.30
89	-39.0	123.0	54.40	84.30	64.20	77.70
90	28.0	196.0	59.60	85.80	67.00	82.10
91	-125.0	250.0	-92.10	155.20	-91.60	164.70
92	-100.0	54.0	-56.60	-26.40	-57.20	-22.40
93	-50.0	150.0	49.70	80.30	61.10	80.70
94	-100.0	54.0	-53.40	-31.10	-48.80	-31.70
95	-100.0	250.0	52.30	130.70	62.20	128.30
96	-100.0	250.0	44.90	144.00	56.50	142.90
97	-125.0	250.0	-98.80	122.90	-97.40	122.20
98	-90.0	245.0	32.90	104.10	44.30	103.80
99	-100.0	250.0	-31.00	0.50	-15.30	1.50
100	-100.0	54.0	-50.30	-32.20	-50.60	-32.10
101	-100.0	250.0	64.00	130.70	66.80	139.20
102	-100.0	250.0	44.60	132.50	55.90	143.60

**Table 8. Calculated Min/Max Daily Averaged Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		First Year 4/7/84 - 5/13/85		End of Mission 12/20/88 - 1/12/90	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
103	-100.0	250.0	44.40	129.00	51.90	139.10
104	-100.0	250.0	59.80	115.60	62.70	121.00
105	-25.0	230.0	98.60	156.30	99.20	158.00
106	-90.0	214.0	-50.50	30.80	-47.00	31.70
107	-100.0	54.0	-64.60	-20.60	-60.30	-22.10
108	-100.0	250.0	38.10	141.00	48.70	133.10
109	-100.0	54.0	-68.50	-13.20	-64.10	-14.90
110	-22.0	194.0	32.60	126.20	40.80	125.50
111	-68.0	111.0	3.90	50.30	12.00	50.40
112	-117.0	124.0	-60.50	-19.10	-61.00	-18.90
113	-100.0	250.0	53.80	118.10	58.50	126.80
114	-96.0	185.0	-64.70	104.60	-64.30	118.00
115	-150.0	250.0	27.70	115.90	31.60	122.60
116	38.0	173.0	51.40	117.80	49.50	125.40
117	-47.0	181.0	47.40	91.20	51.10	96.50
118	-100.0	250.0	65.70	103.90	74.60	99.70
119	-100.0	54.0	-65.20	-21.60	-61.10	-22.90
120	-100.0	54.0	-70.70	-11.40	-66.60	-13.40
121	-100.0	250.0	41.30	138.60	50.10	133.80
122	-100.0	54.0	-12.30	20.40	-5.80	17.90
123	-47.0	181.0	36.20	90.80	51.20	95.50
124	-150.0	250.0	54.90	88.30	53.20	86.30
125	-100.0	54.0	-62.30	-26.00	-62.80	-21.40
126	-68.0	143.0	-35.70	86.50	-31.00	96.20
127	-100.0	54.0	-68.80	-20.50	-67.10	-16.40
128	-100.0	250.0	47.00	98.80	49.10	101.80
129	-93.0	245.0	19.60	56.00	19.00	55.40
130	-100.0	250.0	-30.50	29.50	-25.20	29.50
131	-100.0	54.0	-67.30	-21.90	-63.50	-23.50
132	-100.0	250.0	37.00	136.90	43.70	128.50
133	-100.0	54.0	-70.40	-14.30	-66.80	-16.70
134	-100.0	250.0	-52.00	53.60	-48.70	53.50
135	-93.0	145.0	12.80	56.50	18.70	55.60
136	-90.0	214.0	-47.80	31.50	-47.50	31.80
137	-100.0	54.0	-63.20	-27.80	-64.40	-24.40
138	-40.0	181.0	23.10	117.10	19.90	109.10
139	-100.0	250.0	38.70	120.90	45.90	129.60
140	-100.0	54.0	-60.50	-31.60	-62.50	-30.30
141	-196.0	225.0	32.20	73.80	31.70	73.30
142	-100.0	250.0	59.80	99.70	64.40	93.80
143	-99.0	150.0	18.60	105.40	26.40	103.50
144	-56.0	177.0	-8.80	125.00	-1.90	125.10
145	-100.0	250.0	37.70	139.30	46.20	131.90
146	-100.0	311.0	40.10	108.20	43.30	101.30
147	-87.0	194.0	18.60	62.40	13.00	56.40
148	-100.0	54.0	-54.00	-36.80	-55.60	-38.40
149	-100.0	250.0	48.40	110.60	50.70	113.10
150	-100.0	94.0	-19.90	40.20	-11.30	47.10
151	-100.0	250.0	44.20	129.20	49.60	129.80
152	-50.0	100.0	-41.80	-13.90	-43.80	-13.60

**Table 8. Calculated Min/Max Daily Averaged Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		First Year 4/7/84 - 5/13/85		End of Mission 12/20/88 - 1/12/90	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
153	-100.0	250.0	72.60	98.40	77.10	91.30
154	-100.0	54.0	-58.30	-34.30	-55.10	-35.90
155	-100.0	250.0	43.80	127.30	52.70	124.70
156	-100.0	100.0	-10.60	76.00	0.50	88.40
157	-100.0	250.0	37.20	135.90	46.60	134.40
158	-69.0	178.0	-49.90	51.30	-45.60	52.70
159	-100.0	100.0	-103.30	-64.20	-91.20	-63.50
160	-100.0	250.0	69.80	104.80	70.20	100.00
161	-100.0	250.0	58.40	120.10	53.20	116.80
162	-50.0	150.0	-71.00	81.10	-62.40	111.10
163	10.0	130.0	41.00	111.70	50.80	118.10
164	10.0	130.0	48.20	109.70	56.80	115.90
165	10.0	130.0	58.30	100.10	69.00	102.70
166	10.0	130.0	61.30	90.20	73.80	86.90
167	10.0	130.0	54.90	99.40	66.10	96.70
168	10.0	130.0	44.10	118.70	54.30	114.50
169	10.0	130.0	43.10	123.90	53.00	118.20
170	10.0	130.0	45.50	109.80	55.80	105.00
171	10.0	130.0	53.20	94.00	64.10	90.20
172	10.0	130.0	56.90	85.10	67.40	83.20
173	10.0	130.0	54.00	99.50	62.50	100.50
174	10.0	130.0	45.50	108.70	55.50	113.60
175	10.0	130.0	52.10	129.80	61.90	138.80
176	10.0	130.0	54.80	115.30	64.20	123.20
177	10.0	130.0	70.00	109.60	79.50	114.20
178	10.0	130.0	74.30	101.00	89.50	100.30
179	10.0	130.0	60.00	119.90	71.40	119.60
180	10.0	130.0	55.10	141.30	66.40	139.30
181	10.0	130.0	52.00	141.50	63.60	138.80
182	10.0	130.0	51.00	122.60	62.30	120.10
183	10.0	130.0	58.60	111.00	70.00	109.10
184	10.0	130.0	72.20	98.00	83.50	95.90
185	10.0	130.0	63.80	116.30	70.60	120.80
186	10.0	130.0	58.20	131.90	66.80	140.20
187	10.0	130.0	57.40	123.80	61.50	121.30
188	10.0	130.0	52.50	109.30	56.40	107.00
189	10.0	130.0	66.00	97.50	68.00	90.20
190	10.0	130.0	73.00	93.40	81.30	87.20
191	10.0	130.0	54.20	111.40	62.20	107.30
192	10.0	130.0	45.70	121.00	53.80	119.00
193	10.0	130.0	42.90	124.40	50.70	121.90
194	10.0	130.0	44.30	115.70	51.70	109.90
195	10.0	130.0	59.00	97.20	64.90	89.60
196	10.0	130.0	72.50	96.30	77.90	85.80
197	10.0	130.0	67.40	112.10	64.50	105.20
198	10.0	130.0	62.50	119.70	62.80	115.50
199	30.0	120.0	52.40	81.10	63.50	82.60
200	30.0	120.0	55.50	95.90	66.20	99.10
201	30.0	120.0	60.40	101.60	73.30	100.30
202	30.0	120.0	57.30	104.10	69.50	102.50

**Table 8. Calculated Min/Max Daily Averaged Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		First Year 4/7/84 - 5/13/85		End of Mission 12/20/88 - 1/12/90	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
203	30.0	120.0	56.90	95.00	68.20	98.00
204	-100.0	300.0	121.90	140.40	134.20	145.30
205	-100.0	300.0	103.40	172.20	119.50	177.30
206	-100.0	300.0	117.00	137.90	130.40	140.40
207	-100.0	300.0	107.60	163.30	116.90	174.20
208	30.0	115.0	69.90	92.30	80.20	83.80
209	30.0	115.0	63.80	96.20	71.60	90.60
210	30.0	115.0	63.60	92.80	74.30	90.50
211	30.0	115.0	50.60	89.00	59.00	84.90
212	30.0	115.0	67.40	95.70	72.60	88.40
213	-100.0	300.0	85.40	113.30	87.80	103.90
214	-100.0	300.0	63.40	116.20	70.30	112.50
215	-100.0	300.0	80.20	113.40	84.60	100.00
216	-100.0	300.0	88.20	124.40	79.50	112.10
217	20.0	120.0	49.60	89.00	60.20	89.20
218	20.0	120.0	51.80	89.90	62.20	85.40
219	20.0	120.0	49.80	92.10	59.50	86.70
220	20.0	120.0	50.20	85.70	60.20	84.60
221	10.0	130.0	41.40	115.60	49.60	120.30
222	10.0	130.0	52.40	105.20	61.30	110.10
223	10.0	130.0	58.30	88.70	71.80	89.10
224	10.0	130.0	59.80	99.50	71.10	95.40
225	10.0	130.0	50.40	116.20	61.00	113.70
226	10.0	130.0	44.10	131.20	53.50	122.10
227	10.0	130.0	44.10	127.90	52.40	117.00
228	10.0	130.0	49.80	106.90	57.10	96.80
229	10.0	130.0	57.70	88.50	66.60	82.10
230	10.0	130.0	57.90	95.60	67.40	93.90
231	10.0	130.0	49.20	107.40	56.80	107.90
232	10.0	130.0	37.50	114.60	45.40	115.90
233	25.0	105.0	57.70	89.20	68.60	86.70
234	20.0	110.0	53.40	85.70	63.70	81.20
235	20.0	110.0	53.50	85.40	63.80	80.90
236	0.0	120.0	52.50	86.10	63.60	85.00
237	0.0	130.0	49.90	92.70	59.90	87.90
238	-100.0	150.0	42.00	63.80	51.50	65.60
239	-100.0	150.0	41.70	66.30	48.00	62.00
240	10.0	130.0	35.40	106.50	43.40	108.80
241	10.0	130.0	43.10	100.70	50.90	101.90
242	10.0	130.0	52.80	86.70	62.40	84.00
243	10.0	130.0	58.70	83.70	68.80	78.60
244	10.0	130.0	49.40	97.30	58.00	93.40
245	10.0	130.0	38.20	111.30	47.50	107.80
246	10.0	130.0	36.00	118.20	45.20	113.40
247	10.0	130.0	43.80	107.60	52.40	100.90
248	10.0	130.0	51.80	91.50	60.30	84.90
249	10.0	130.0	56.80	83.40	66.20	77.60
250	10.0	130.0	52.00	95.80	59.20	93.80
251	10.0	130.0	39.90	102.30	47.00	102.00
252	2.0	82.0	46.90	61.70	42.70	56.90

**Table 8. Calculated Min/Max Daily Averaged Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		First Year 4/7/84 - 5/13/85		End of Mission 12/20/88 - 1/12/90	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
253	-100.0	250.0	61.20	102.90	75.60	102.10
254	-100.0	91.0	18.90	40.80	25.80	39.20
255	-100.0	250.0	63.90	101.60	79.10	101.00
256	-100.0	250.0	54.60	83.80	66.60	81.80
257	-100.0	250.0	52.60	79.30	64.20	81.30
258	-100.0	250.0	53.40	79.90	65.30	81.20
259	-100.0	200.0	23.20	33.40	24.10	33.50
260	-150.0	217.0	39.40	65.70	48.90	68.00
261	-62.0	147.0	-23.10	30.10	-16.20	30.00
262	-150.0	467.0	82.90	123.80	86.20	123.80
263	-100.0	250.0	39.80	94.30	44.90	94.40
264	-100.0	99.0	3.30	33.80	15.60	31.10
265	-100.0	250.0	84.10	116.80	97.20	117.30
266	-100.0	99.0	8.60	35.10	25.80	32.90
267	-100.0	200.0	83.70	114.20	92.30	101.60
268	-44.0	78.0	-54.90	-10.70	-40.40	-10.40
269	-44.0	78.0	-53.30	-11.20	-42.40	-11.10
270	-20.0	130.0	45.80	134.10	54.80	125.20
271	-66.0	268.0	24.30	176.40	27.40	194.50
272	-66.0	268.0	47.20	119.20	58.60	116.20
273	-150.0	250.0	-43.60	10.50	-42.00	11.40
274	-100.0	250.0	15.40	119.50	16.50	126.30
275	-100.0	250.0	43.30	81.30	39.30	79.90
276	-150.0	262.0	-22.90	83.90	-24.50	95.70
277	-91.0	249.0	45.90	97.30	47.80	100.30
278	-150.0	350.0	34.60	84.00	33.20	87.70
279	-150.0	234.0	-91.00	121.90	-93.80	117.40
280	-74.0	326.0	15.40	124.70	17.40	127.90
281	-95.0	241.0	-2.30	132.60	-0.90	136.00
282	-100.0	250.0	46.90	88.30	52.40	86.20
283	-20.0	181.0	49.70	78.20	60.00	80.60
284	-100.0	250.0	31.70	52.20	39.80	53.90
285	-150.0	467.0	25.30	39.80	31.10	38.40
286	-100.0	150.0	24.40	43.30	27.90	40.70
287	-100.0	150.0	49.30	72.50	52.90	74.20
288	-100.0	150.0	54.30	78.80	57.70	79.10
289	-100.0	150.0	8.30	18.10	9.00	18.00
290	-100.0	150.0	19.70	35.30	20.90	35.80
291	-100.0	150.0	51.90	74.60	52.60	73.30
292	-100.0	150.0	8.00	18.00	9.00	18.20
293	-100.0	150.0	19.10	35.00	20.80	35.40
294	-100.0	300.0	78.20	250.50	84.80	269.20
295	-100.0	300.0	92.10	204.20	95.00	224.10
296	-100.0	300.0	138.50	169.70	144.60	177.10
297	-100.0	300.0	110.30	183.80	126.80	190.90
298	-100.0	300.0	71.50	241.60	87.60	248.10
299	-100.0	300.0	90.10	254.90	107.30	262.50
300	-100.0	300.0	70.40	263.60	86.30	270.30
301	-100.0	300.0	78.60	215.50	90.70	219.60
302	-100.0	300.0	125.50	168.00	139.40	171.70



**Table 8. Calculated Min/Max Daily Averaged Temperatures. (Cont.)**

Node Number	Allowable Temperature Limits		First Year 4/7/84 - 5/13/85		End of Mission 12/20/88 - 1/12/90	
	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F	Tmin-°F	Tmax-°F
303	-100.0	300.0	120.40	183.70	122.60	187.40
304	-100.0	300.0	82.20	268.60	87.60	291.90
305	-100.0	300.0	91.30	220.40	101.80	238.20
306	-100.0	300.0	57.80	139.70	56.60	137.80
307	-100.0	300.0	67.00	119.20	60.30	113.50
308	-100.0	300.0	87.60	110.60	81.40	100.40
309	-100.0	300.0	67.10	110.20	72.60	102.40
310	-100.0	300.0	48.80	136.80	56.30	132.40
311	-100.0	300.0	49.30	144.00	55.80	140.00
312	-100.0	300.0	44.50	146.70	51.60	141.60
313	-100.0	300.0	52.70	120.10	56.10	110.20
314	-100.0	300.0	75.40	109.30	77.90	95.50
315	-100.0	300.0	79.90	112.80	70.50	99.10
316	-100.0	300.0	66.00	136.90	58.00	132.20
317	-100.0	300.0	69.10	142.40	63.80	136.70
318	30.0	120.0	53.00	97.40	66.80	101.40
319	30.0	120.0	59.50	99.30	69.70	96.30
320	30.0	120.0	57.40	100.90	65.80	96.60
321	30.0	120.0	56.30	96.80	68.80	98.50
322	30.0	120.0	55.70	96.50	66.80	95.40
323	30.0	120.0	57.30	91.90	67.70	88.70
324	30.0	120.0	53.80	94.50	62.60	90.00
325	30.0	120.0	58.50	93.50	68.40	89.60
326	10.0	130.0	38.70	135.80	49.10	128.80
327	30.0	120.0	58.70	100.90	72.40	100.30

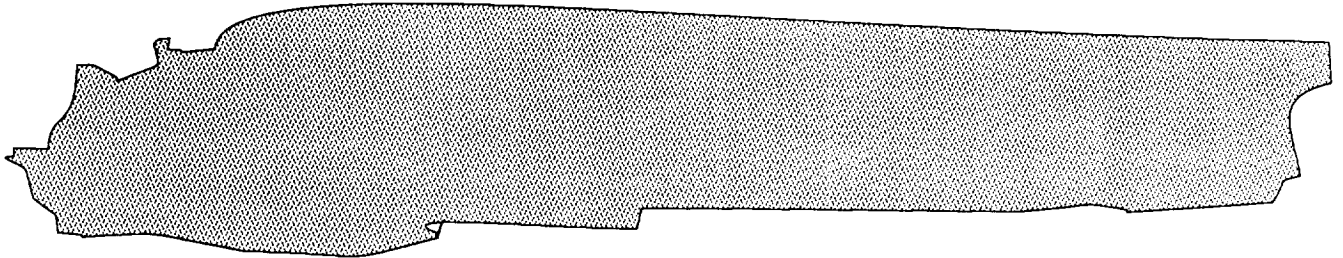
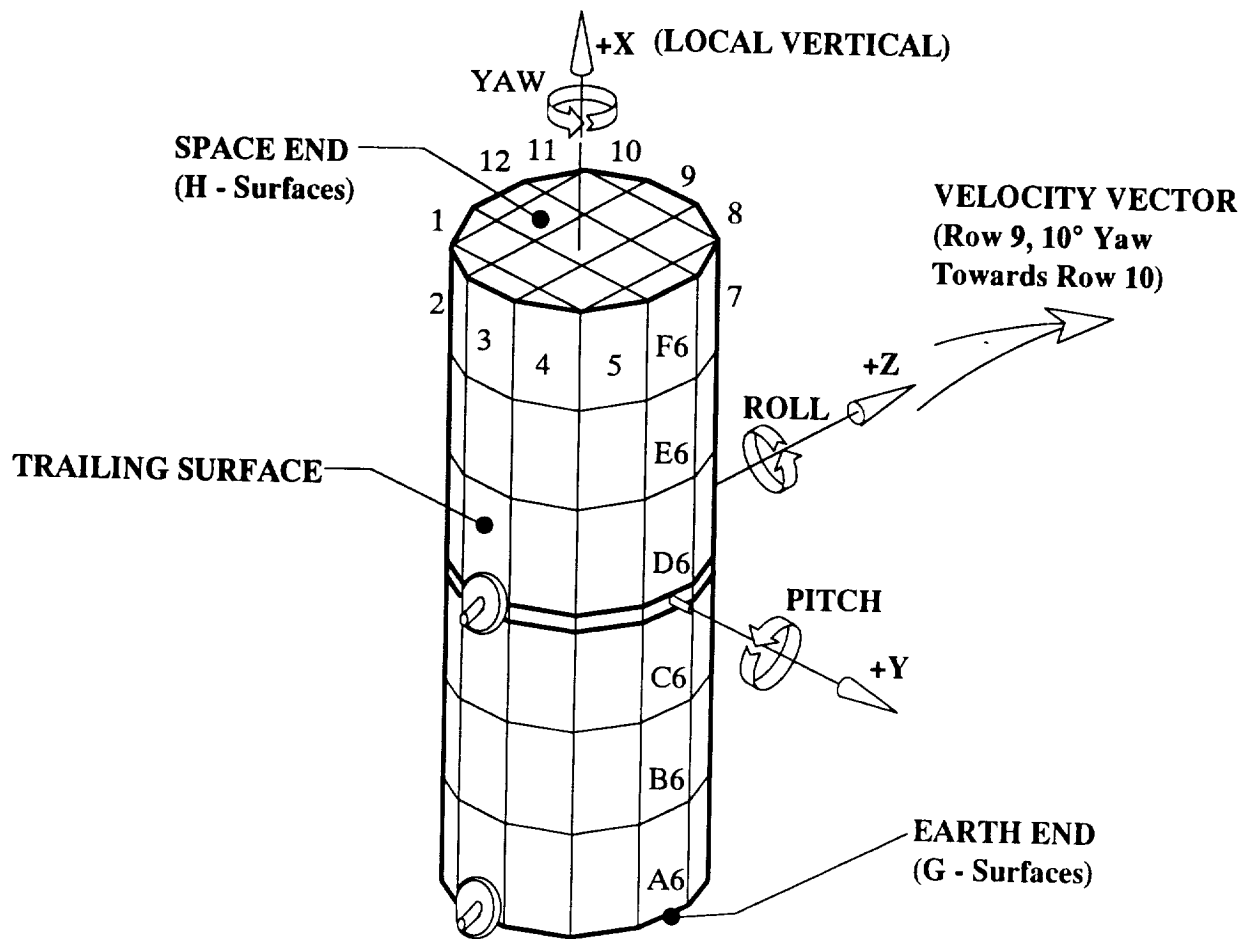


Fig. 1 LDEF in Free Flight

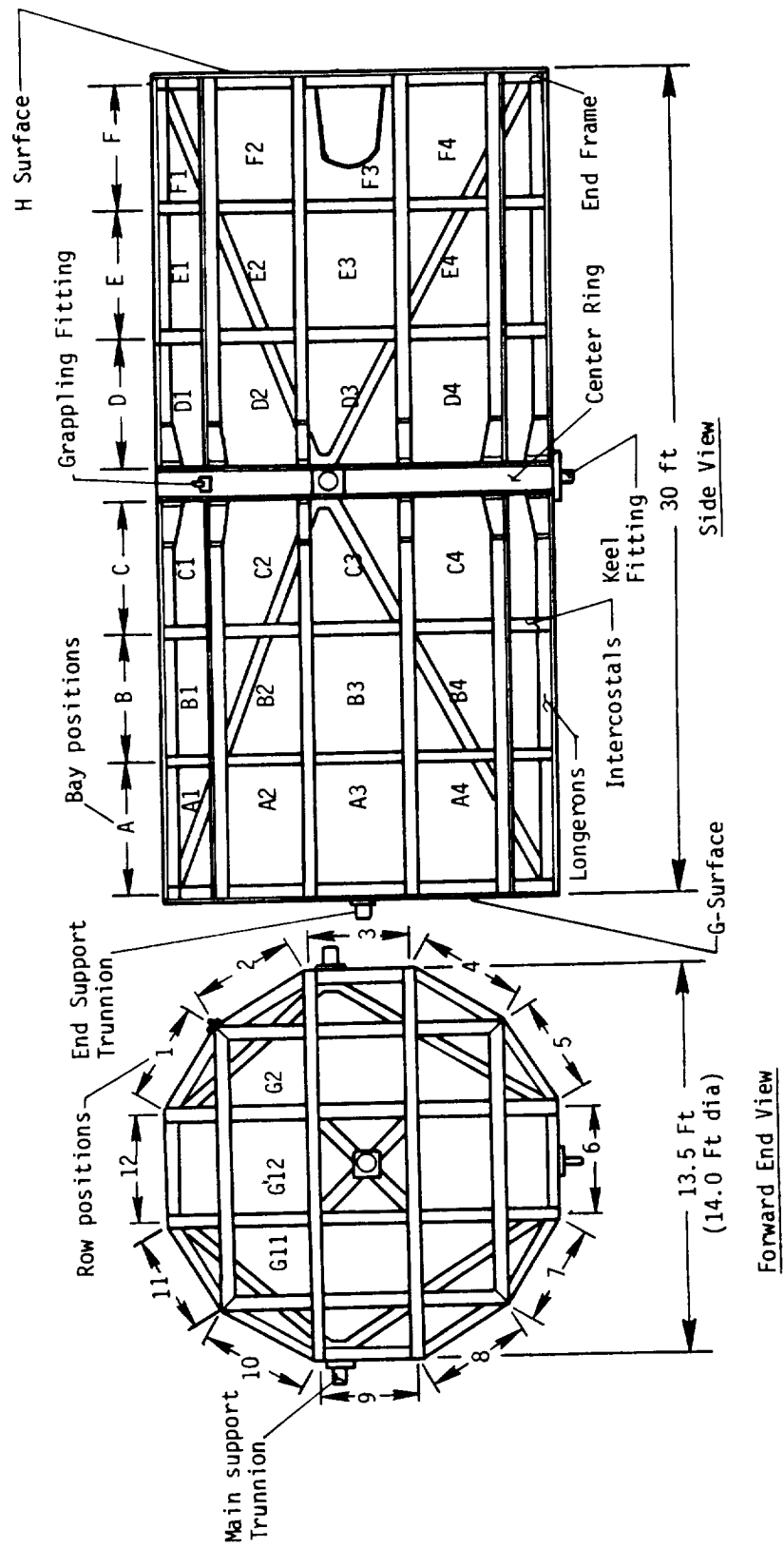


Fig. 2 LDEF Structure.

NOTE:

1- All tray sides 0.063 in.  
6061-T6 Aluminum  
(Chromic Anodize)

2- All dimensions are in inches

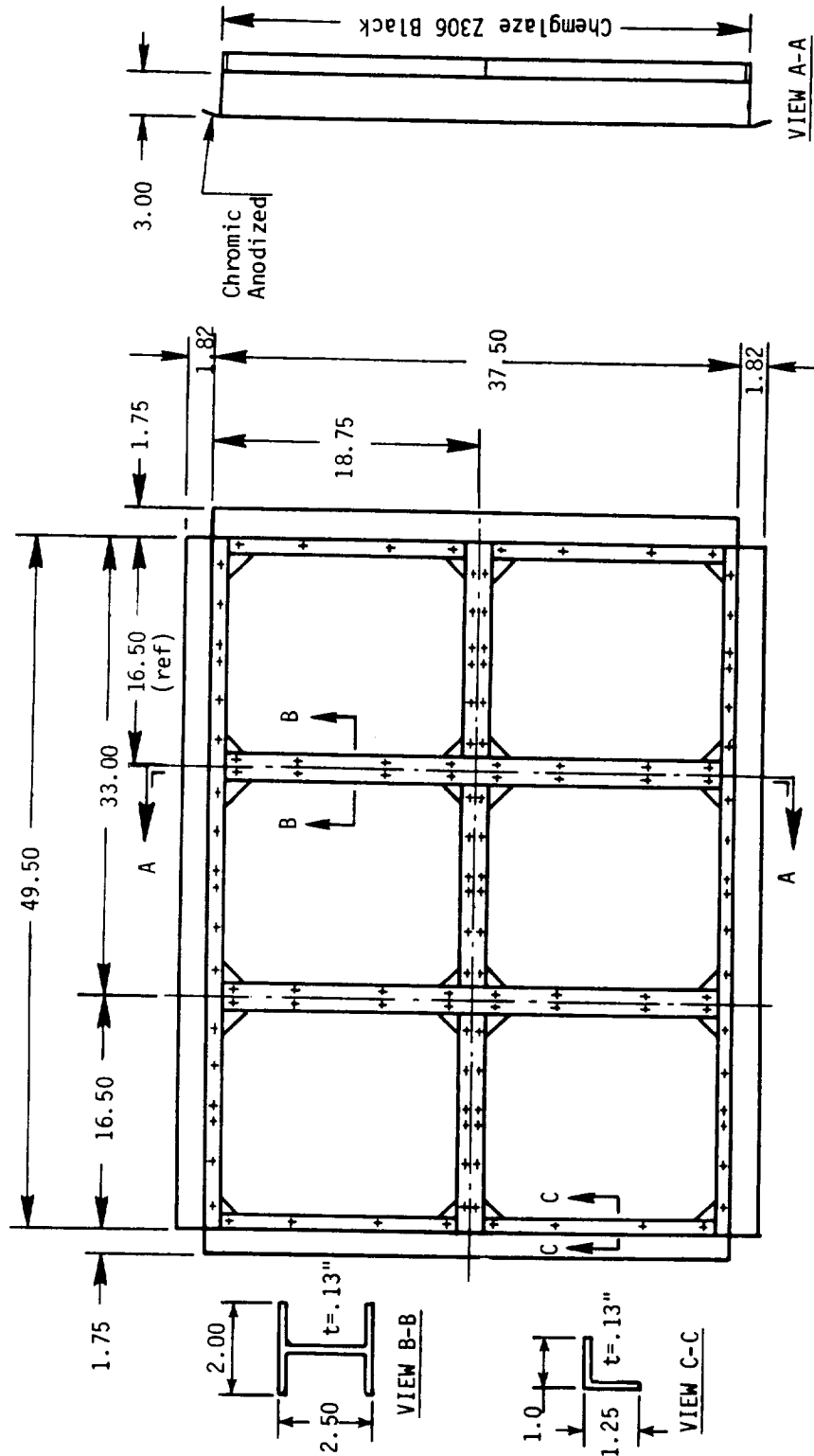
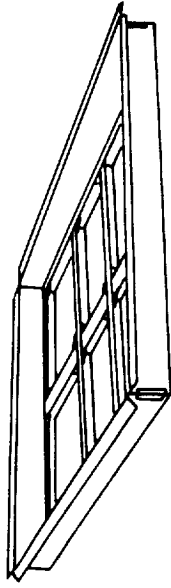


Fig. 3 LDEF Peripheral Tray Assembly - 3 Inch Tray

NOTE:

1- All tray sides 0.125 in.  
6061-T6 Aluminum  
(Chromic Anodize)

2- All dimensions are in inches

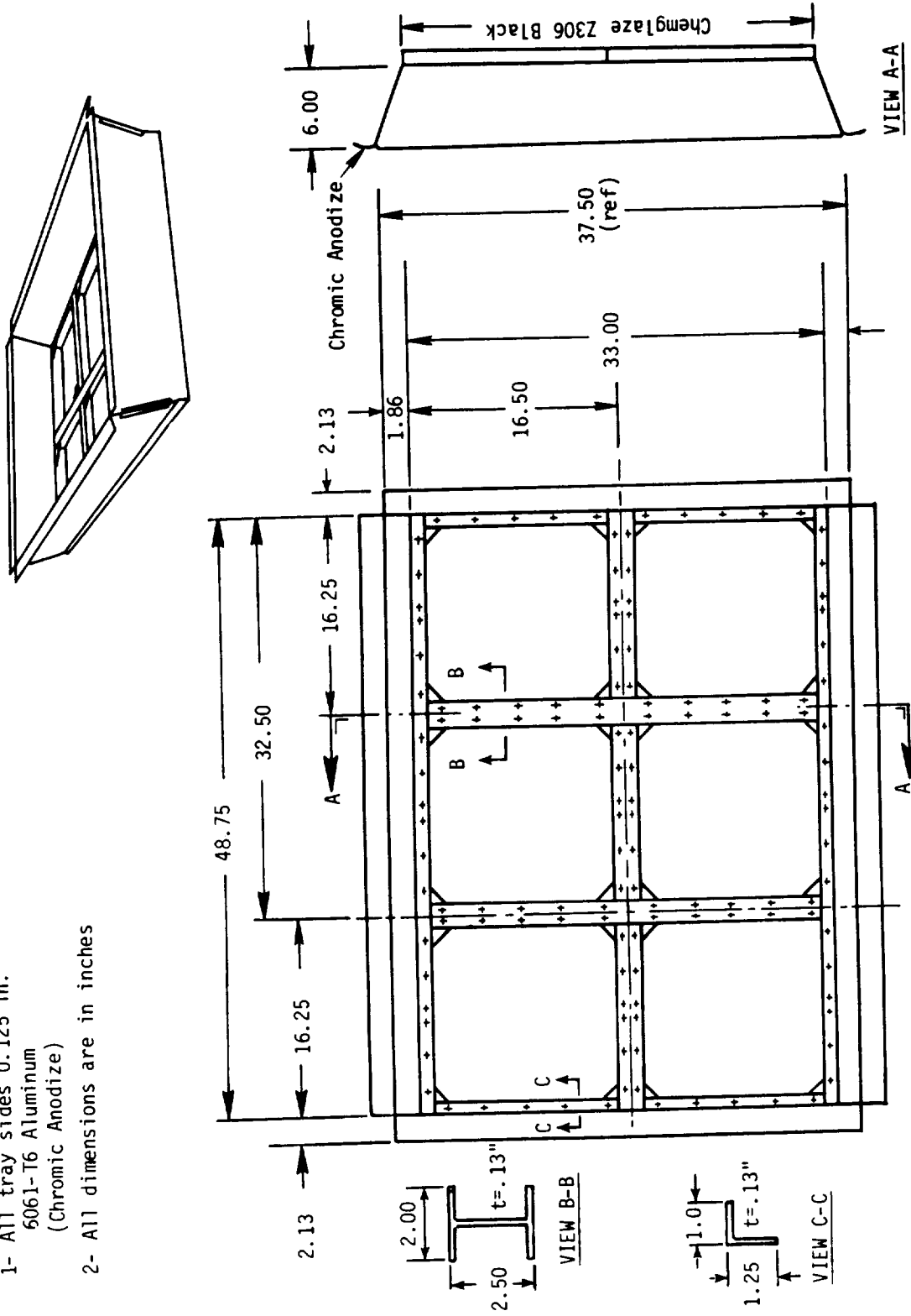


Fig. 4 LDEF Peripheral Tray Assembly - 6 Inch Tray

NOTE:

1- All tray sides 0.063 in.  
6061-T6 Aluminum  
(Chromic Anodize)

2- All dimensions are in inches

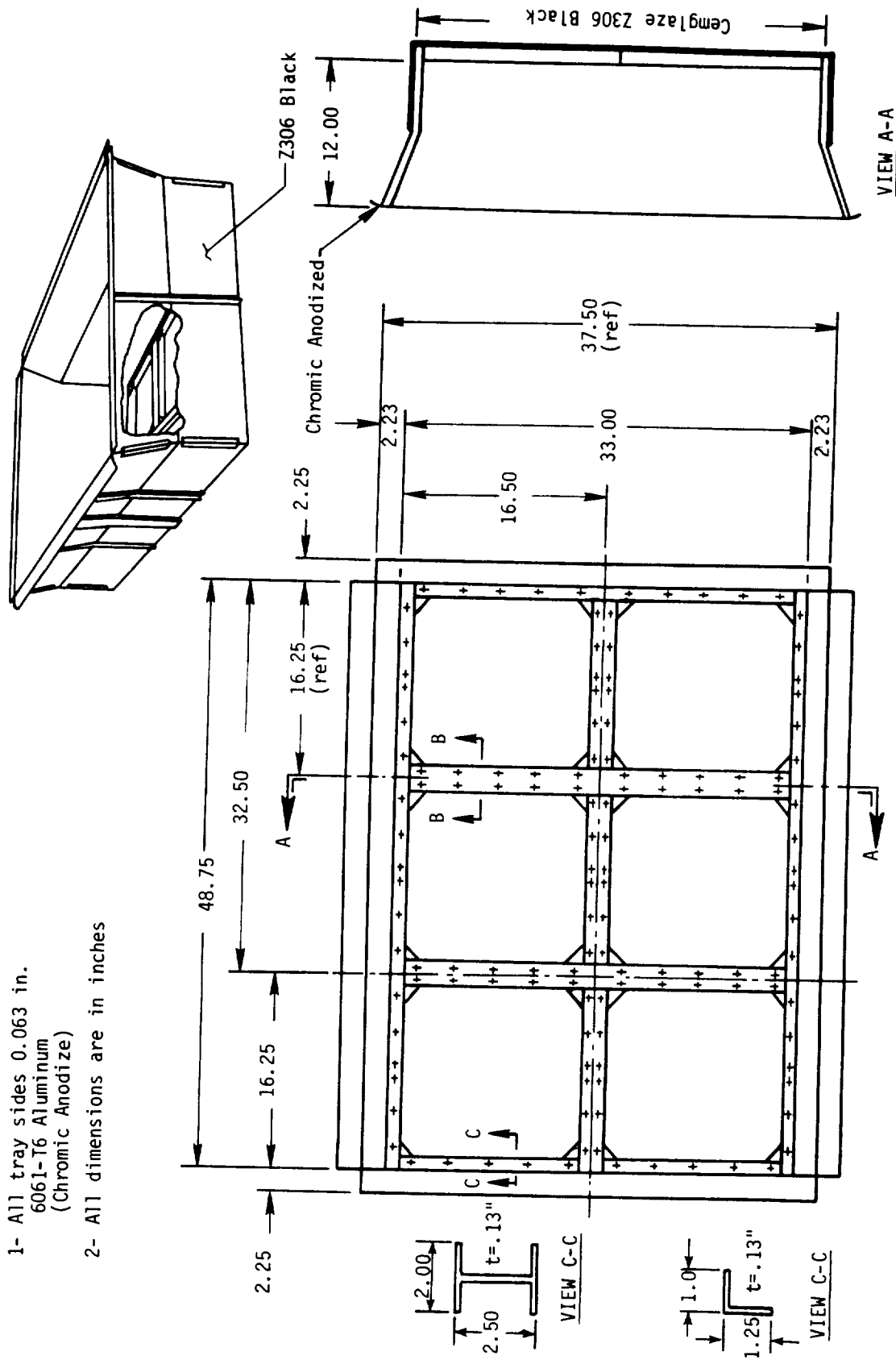


Fig. 5 LDEF Peripheral Tray Assembly - 12 Inch Tray

NOTE:

1. All tray sides 0.125 in.  
6061-T6 aluminum  
(chromic anodize)
2. All dimensions are in inches

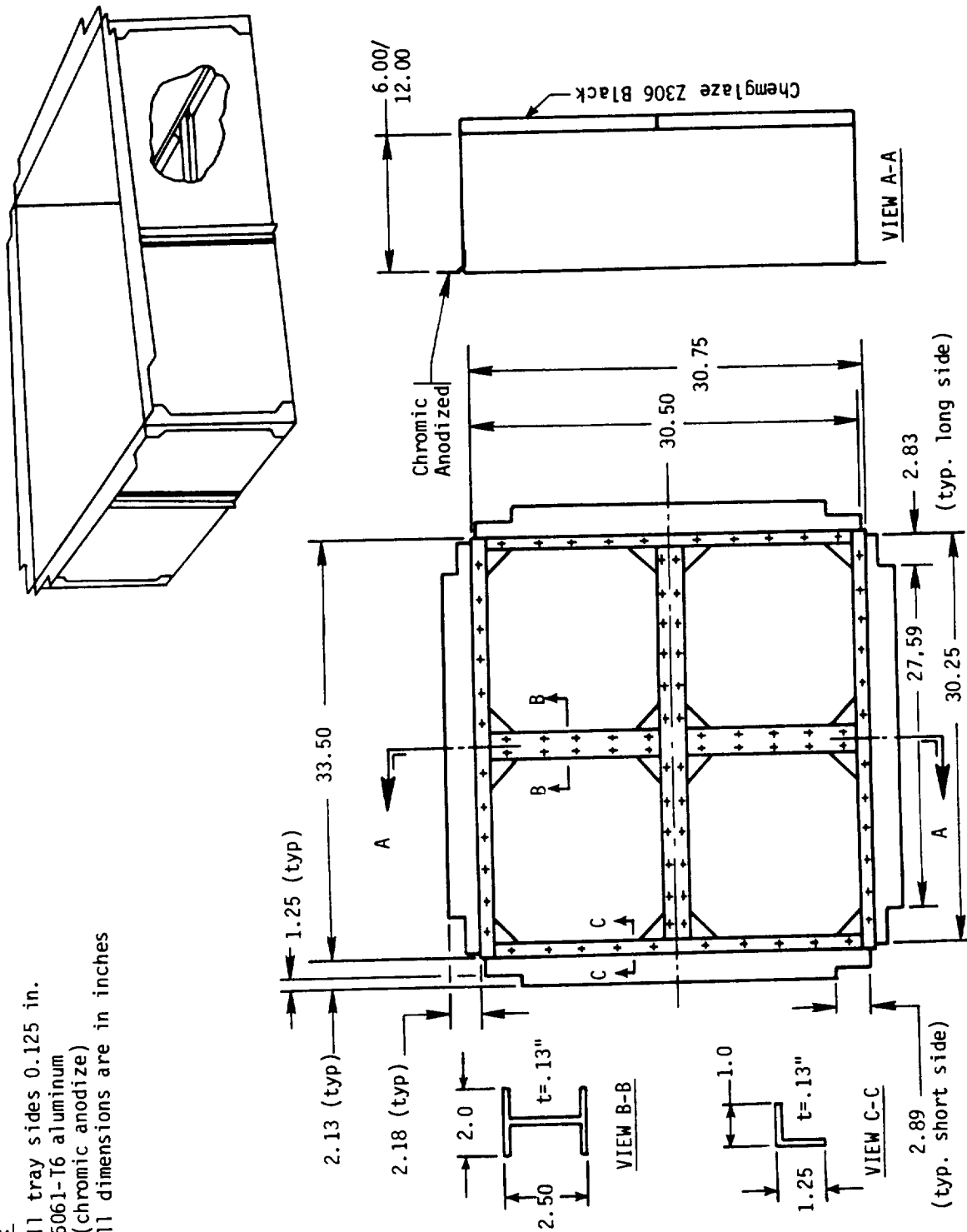


Fig. 6 LDEF End "Center" Tray - 6 & 12 Inch Deep

**NOTE:**

1-All tray sides 0.125 in.

6061-T6 aluminum  
(chromic anodize)

2-All dimensions are in inches

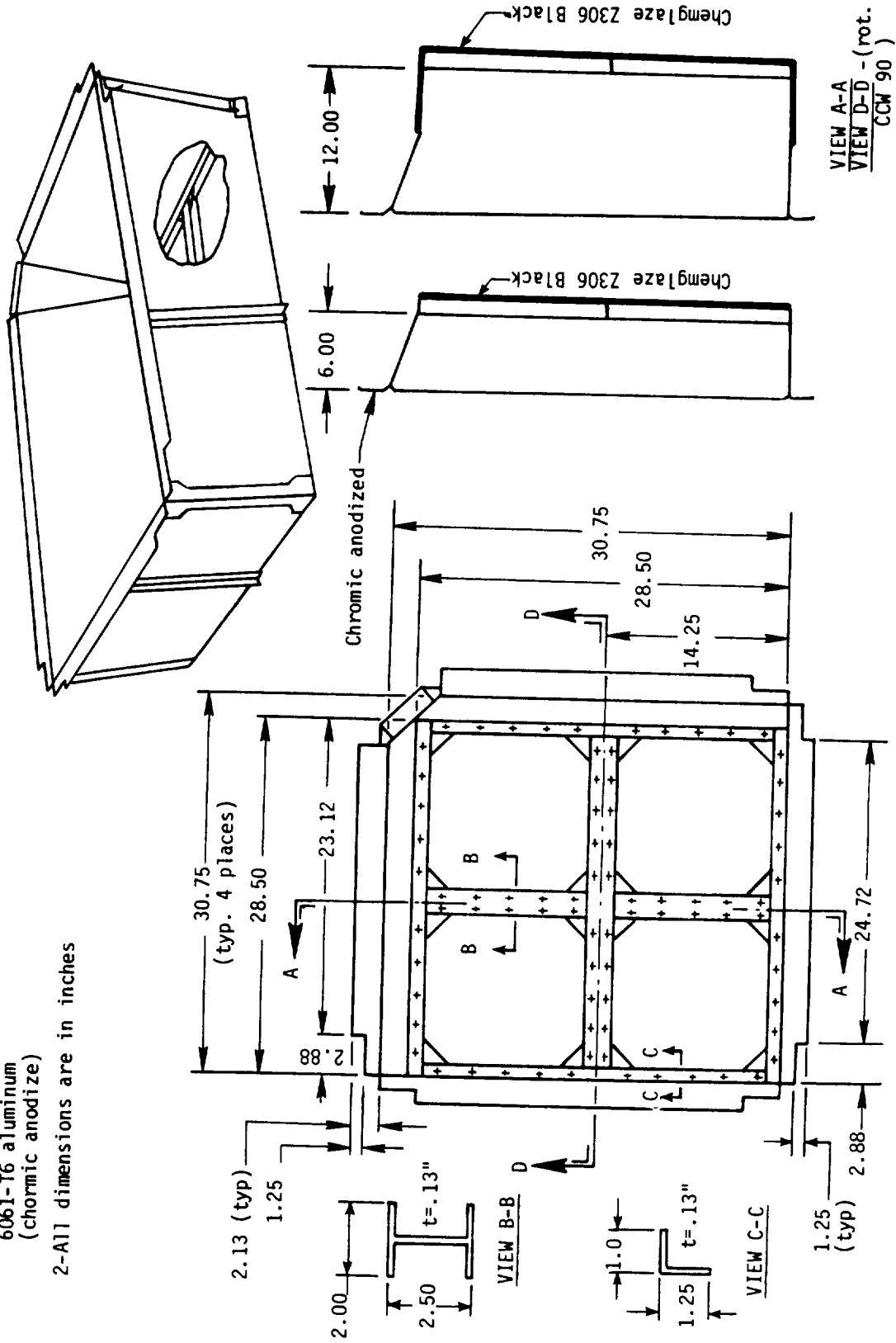
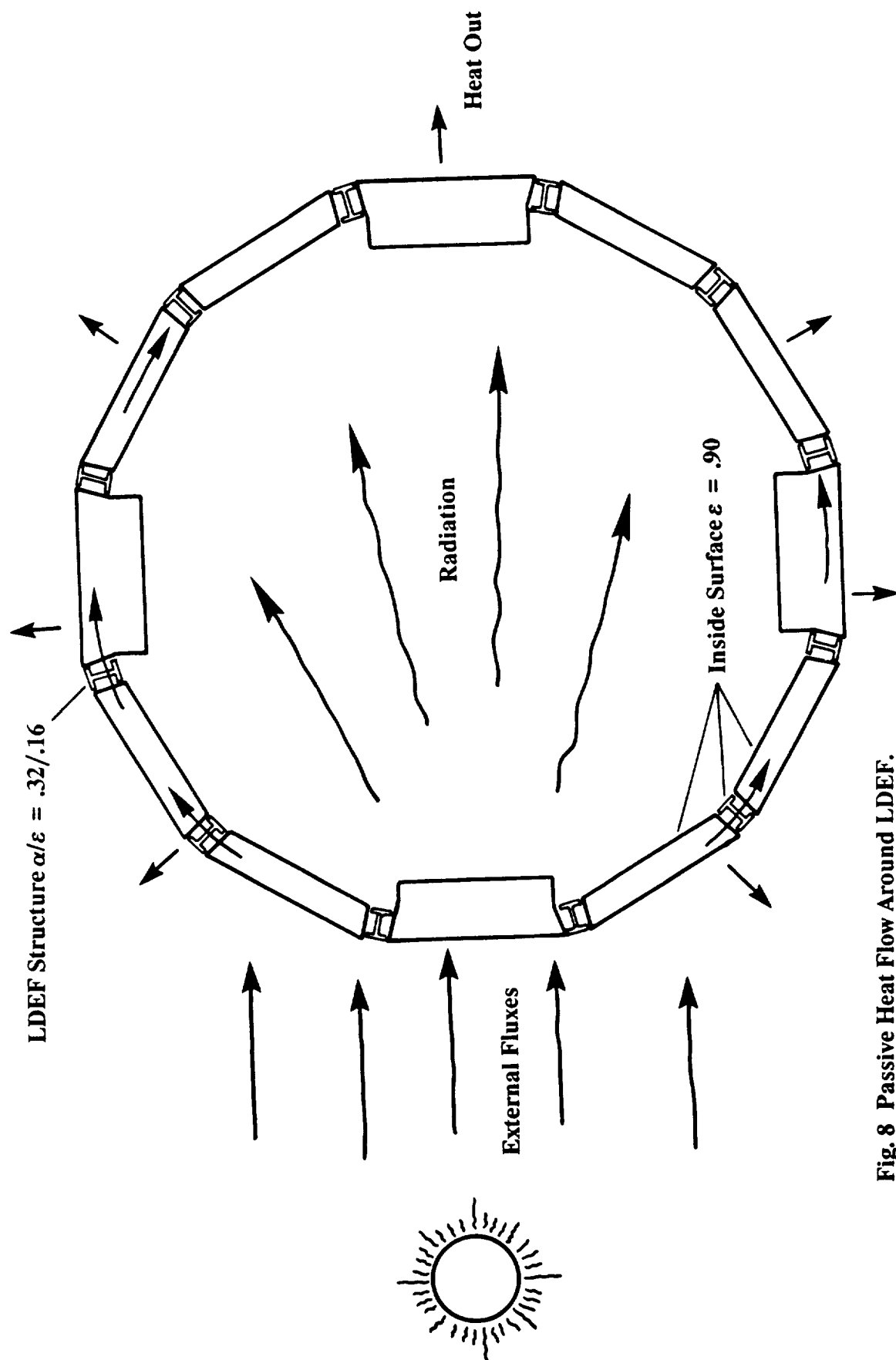


Fig. 7 LDEF End "Corner" - Tray 6 & 12 Inch Deep





**Fig. 8** Passive Heat Flow Around LDEF.

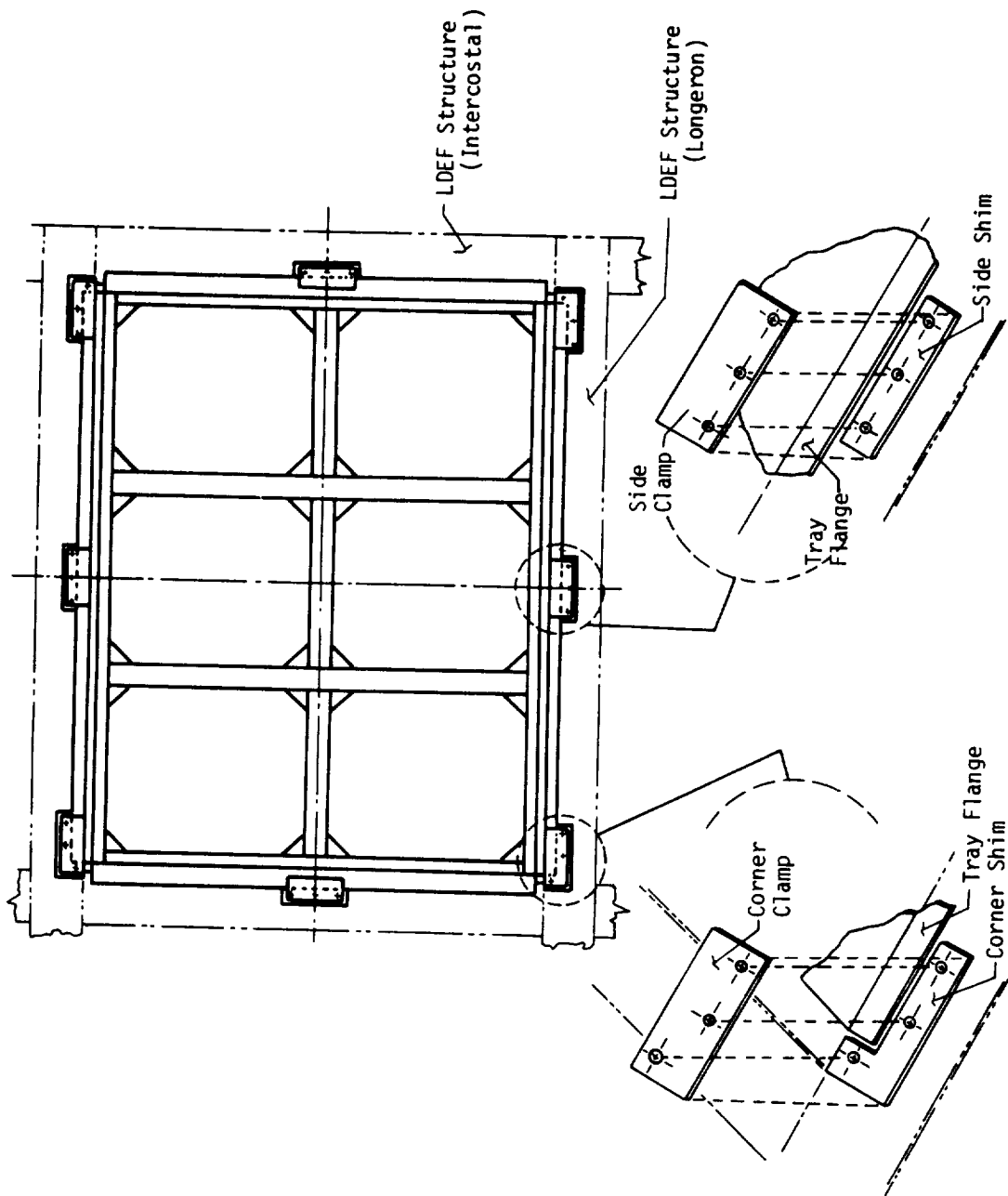
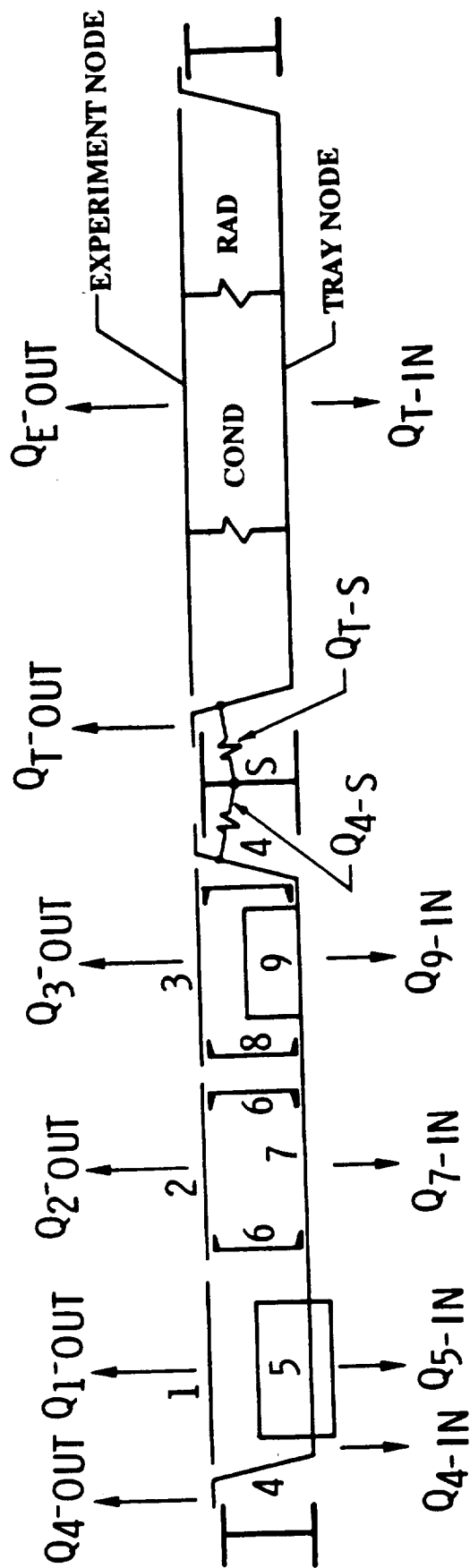


Fig. 9 Tray - Structure Interface

LDEF REDUCED  
NODE MODEL

EXPERIMENTER'S  
ORIGINAL MODEL



Q = HEAT FLOW, BTU/HR  
E = EXPERIMENT  
S = STRUCTURE  
T = TRAY

$$\begin{aligned}\Sigma Q_{1 \rightarrow 3-OUT} &= Q_{EXPERIMENT-OUT} \\ \Sigma Q_{4-OUT} &= Q_{TRAY-OUT} \\ \Sigma Q_{4 \rightarrow 9-IN} &= Q_{TRAY-IN} \\ \Sigma Q_{4 \rightarrow STRUCT} &= Q_{TRAY-STRUCT}\end{aligned}$$

Fig. 10 Comparison of Original Thermal Model to the LDEF Reduced Model

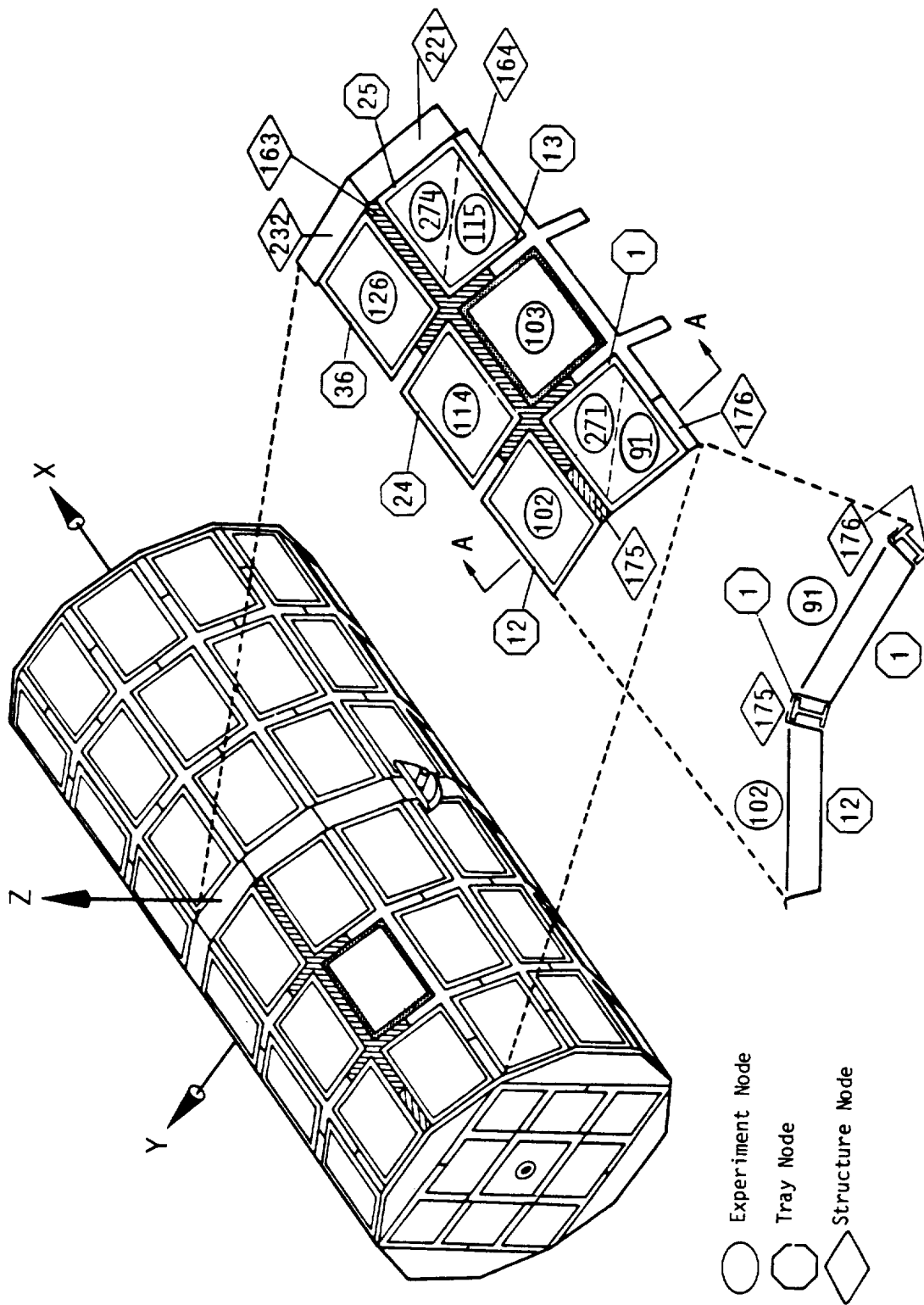


Fig. 11 Detail of Thermal Model Node Arrangement

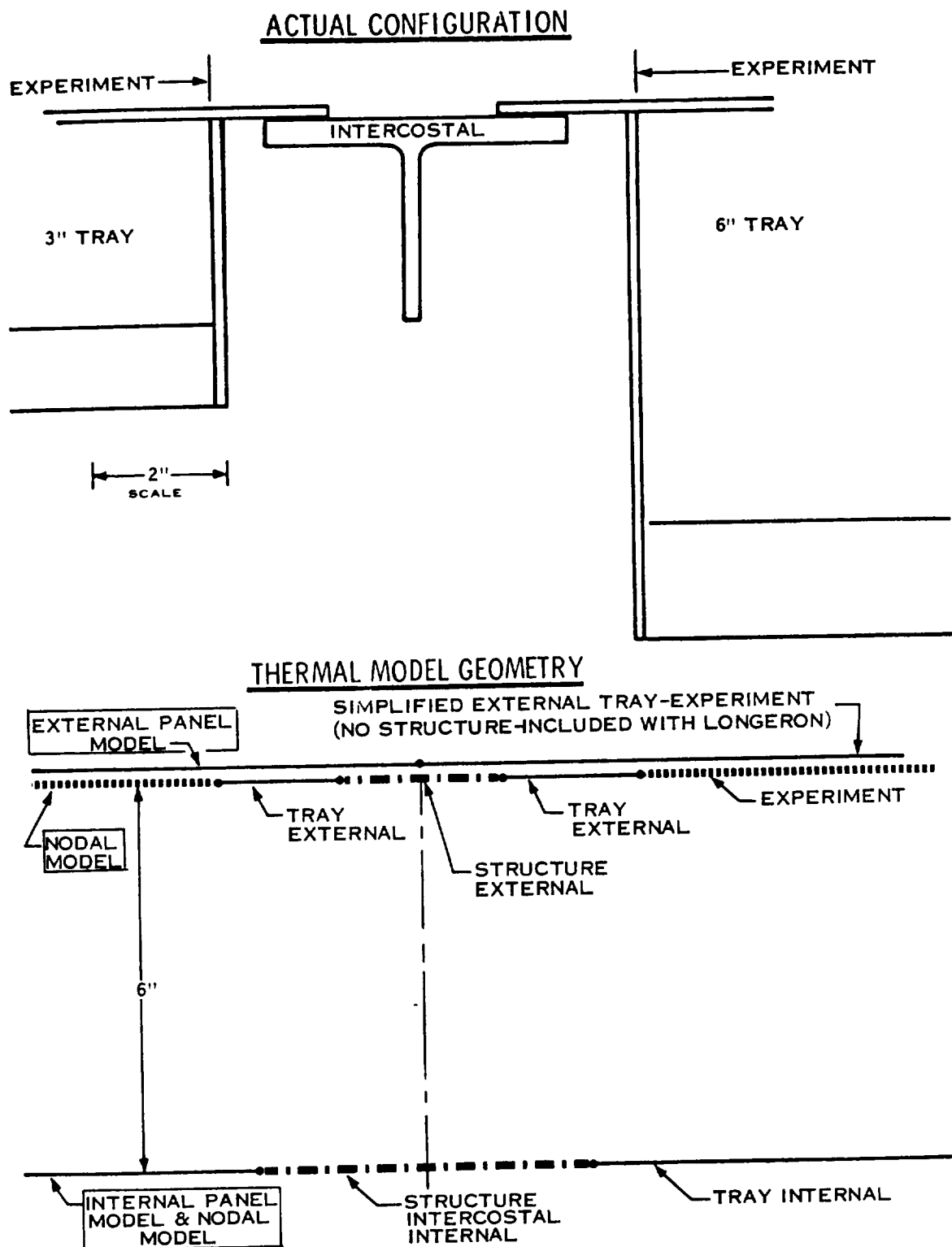


Fig. 12 Thermal Model Intercostal Configuration

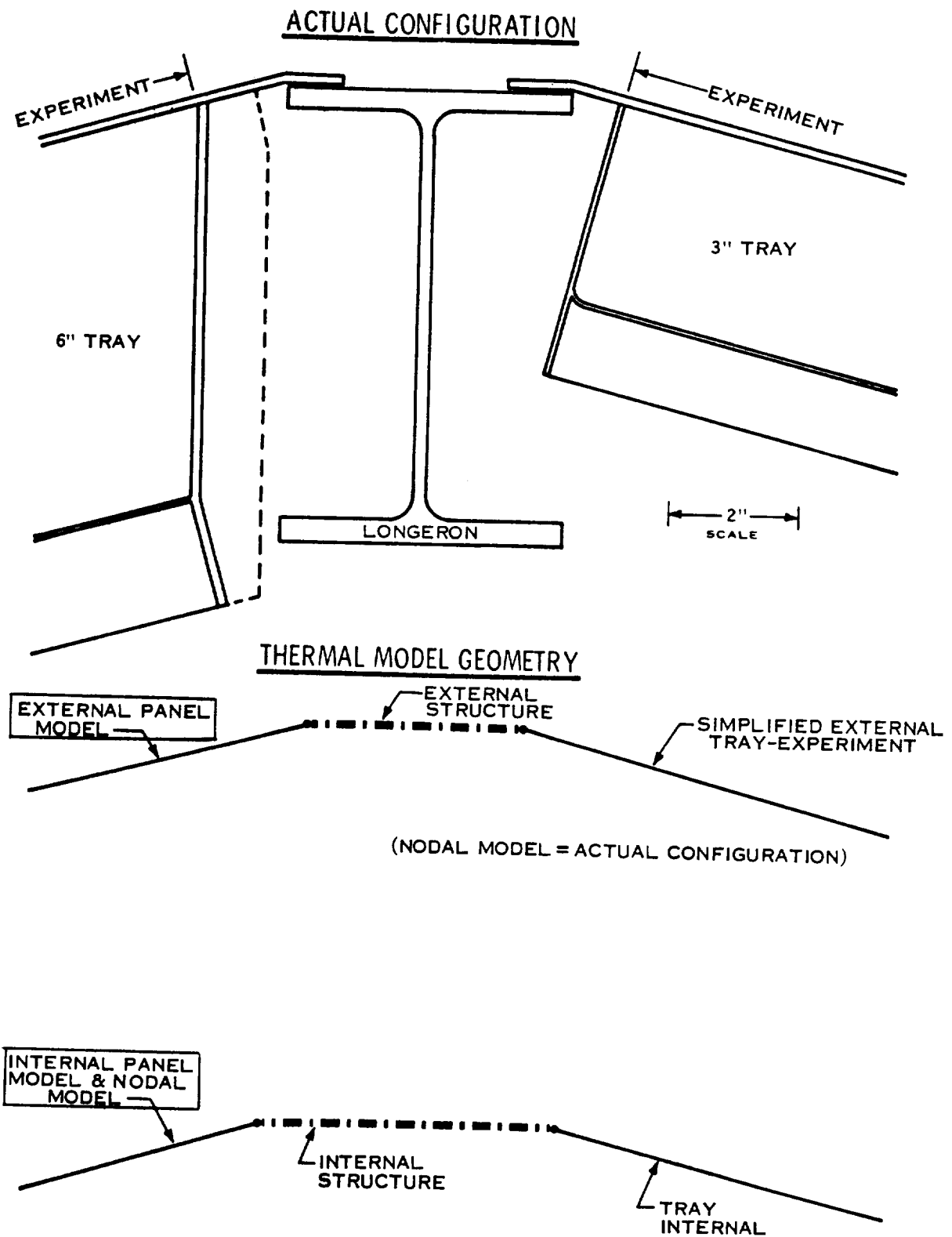


Fig. 13 Thermal Model Longeron Configuration

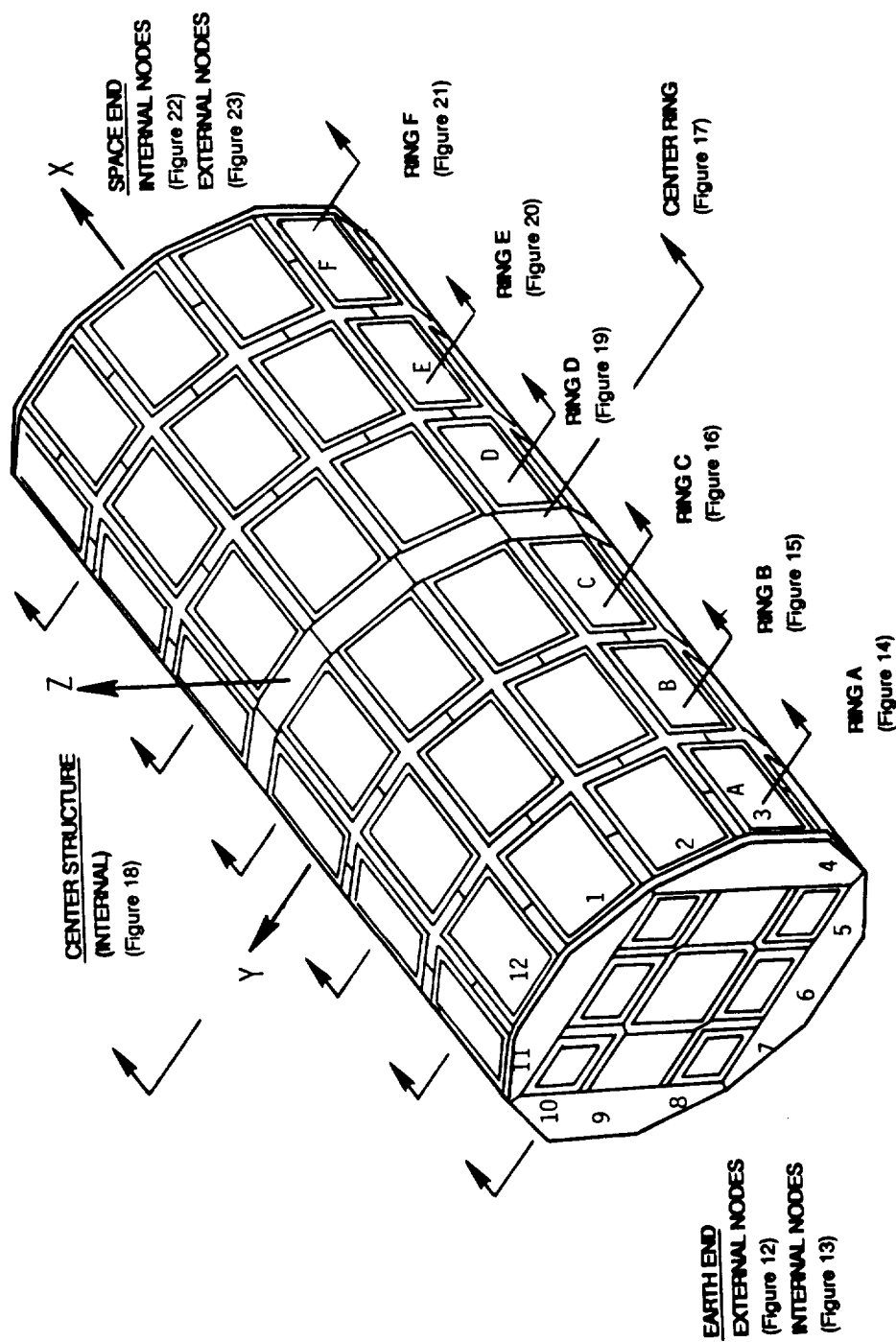


Fig. 14 LDEF Thermal Nodal Model

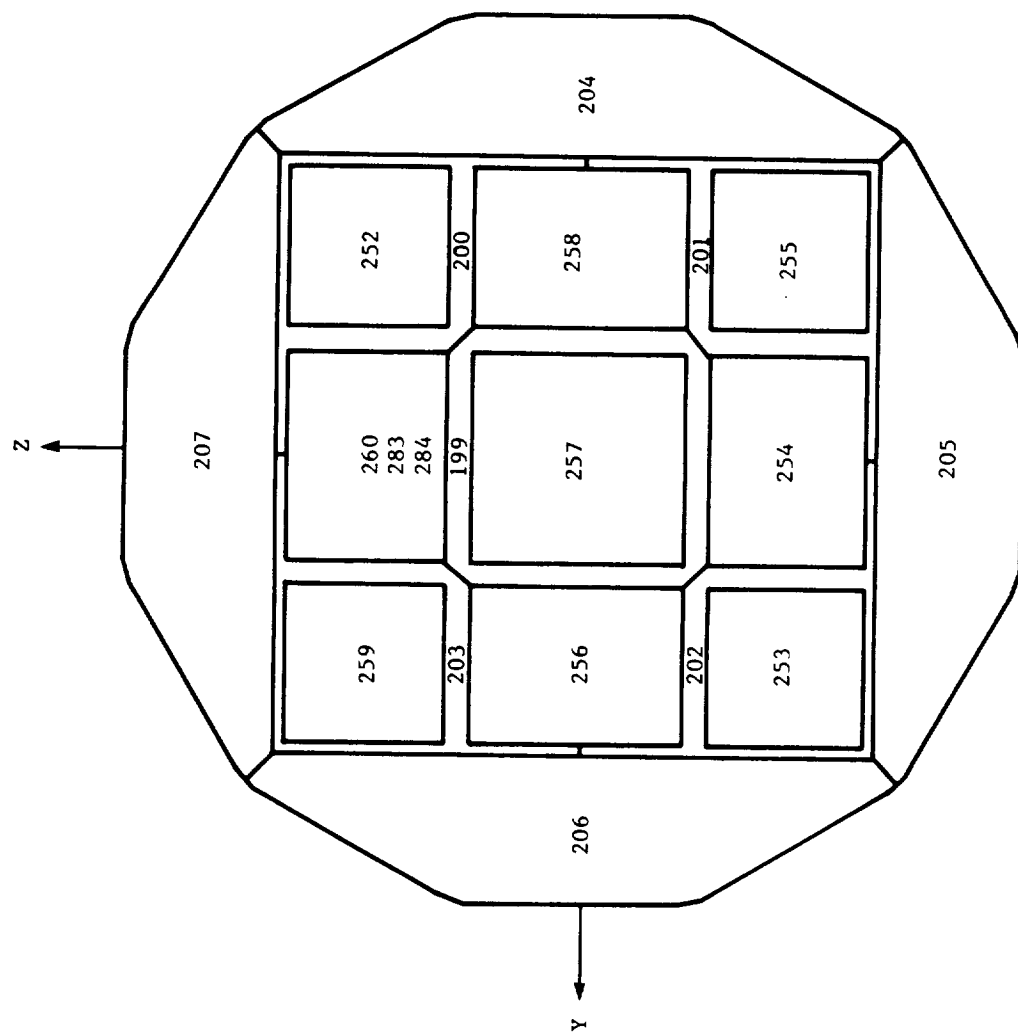


Fig. 15 LDEF Thermal Model, External Nodes - Earth End





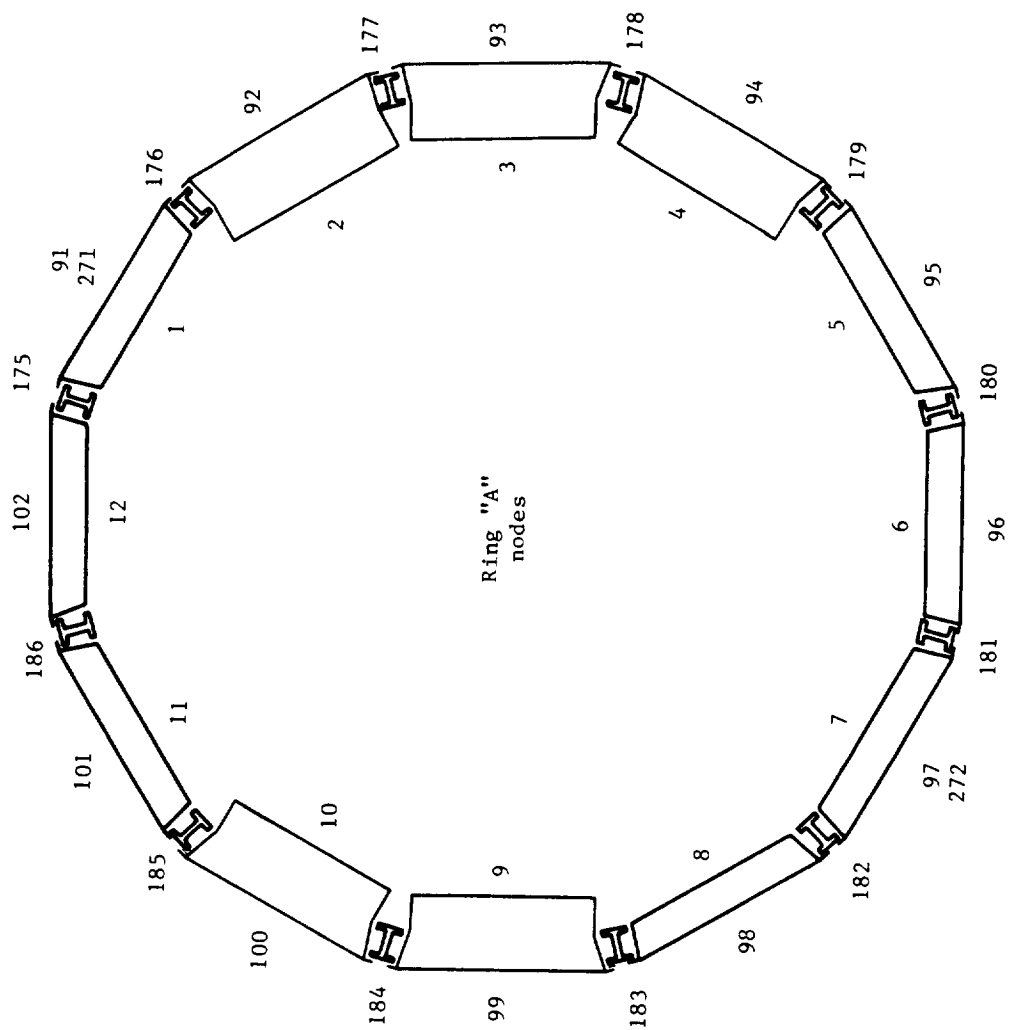


Fig. 17 LDEF Thermal Model, Ring "A" Nodes

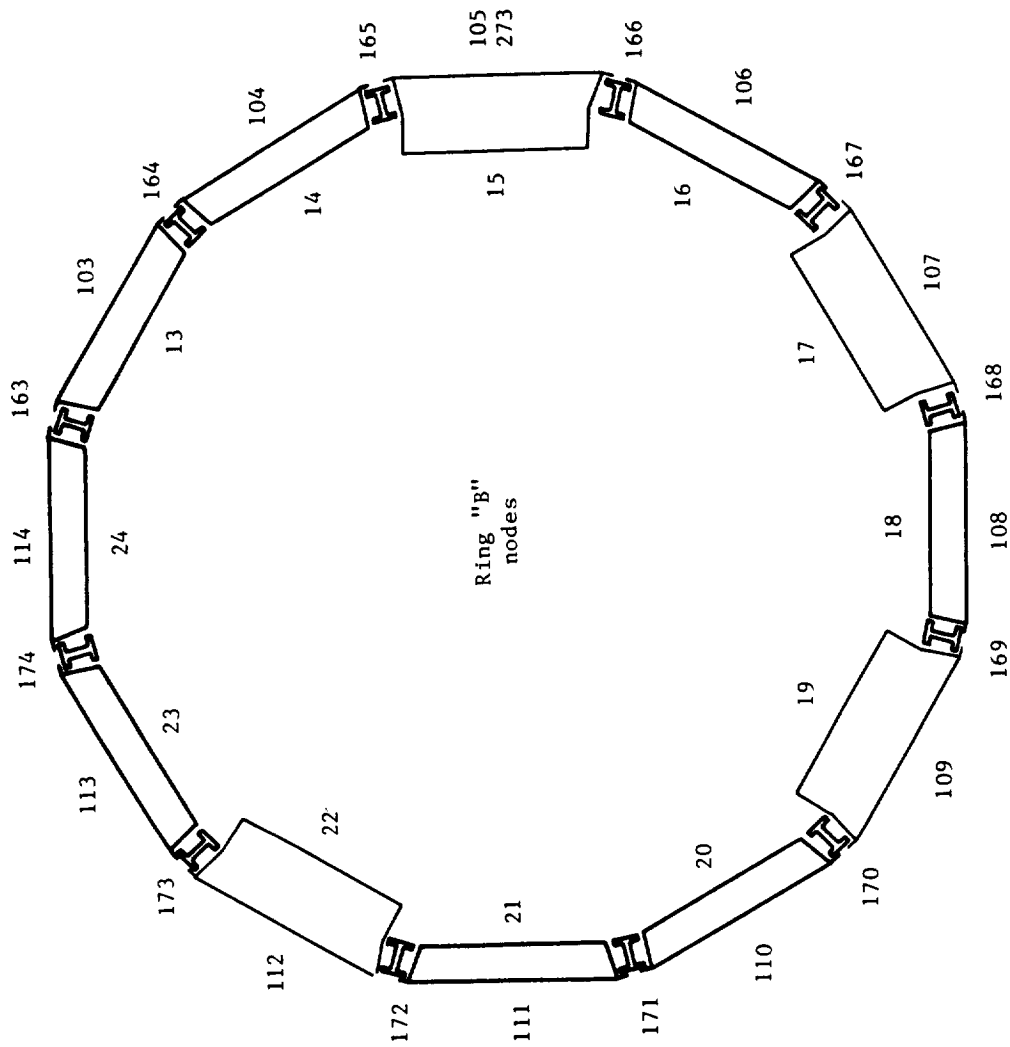


Fig. 18 LDEF Thermal Model, Ring "B" Nodes

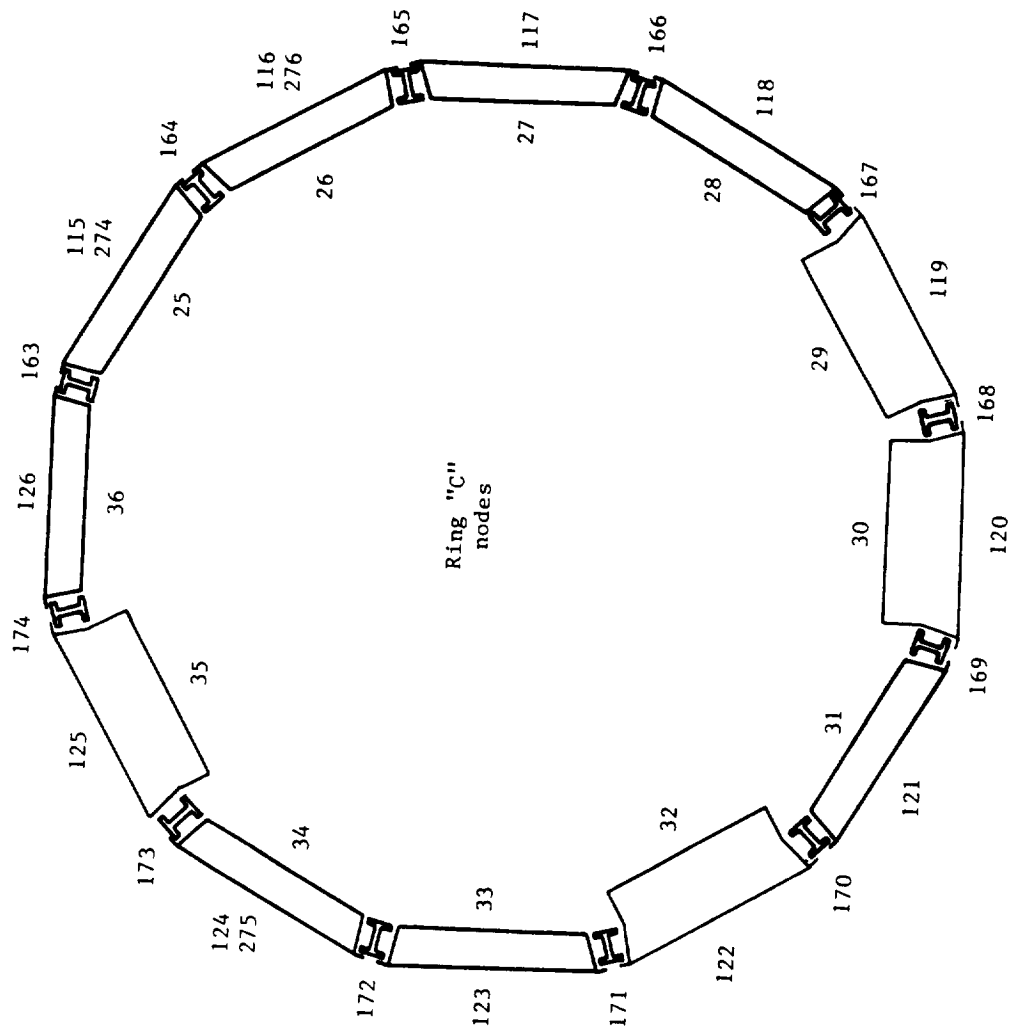


Fig. 19 LDEF Thermal Model, Ring "C" Nodes

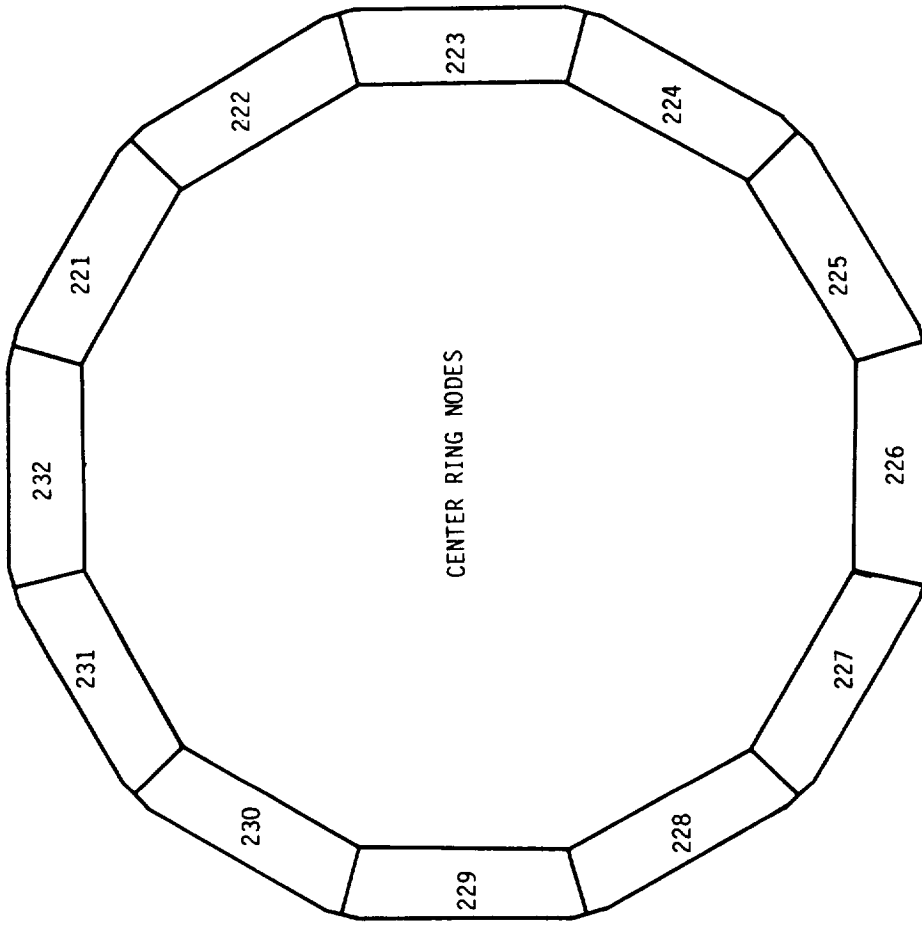


Fig. 20 LDEF Thermal Model, Center Ring Nodes

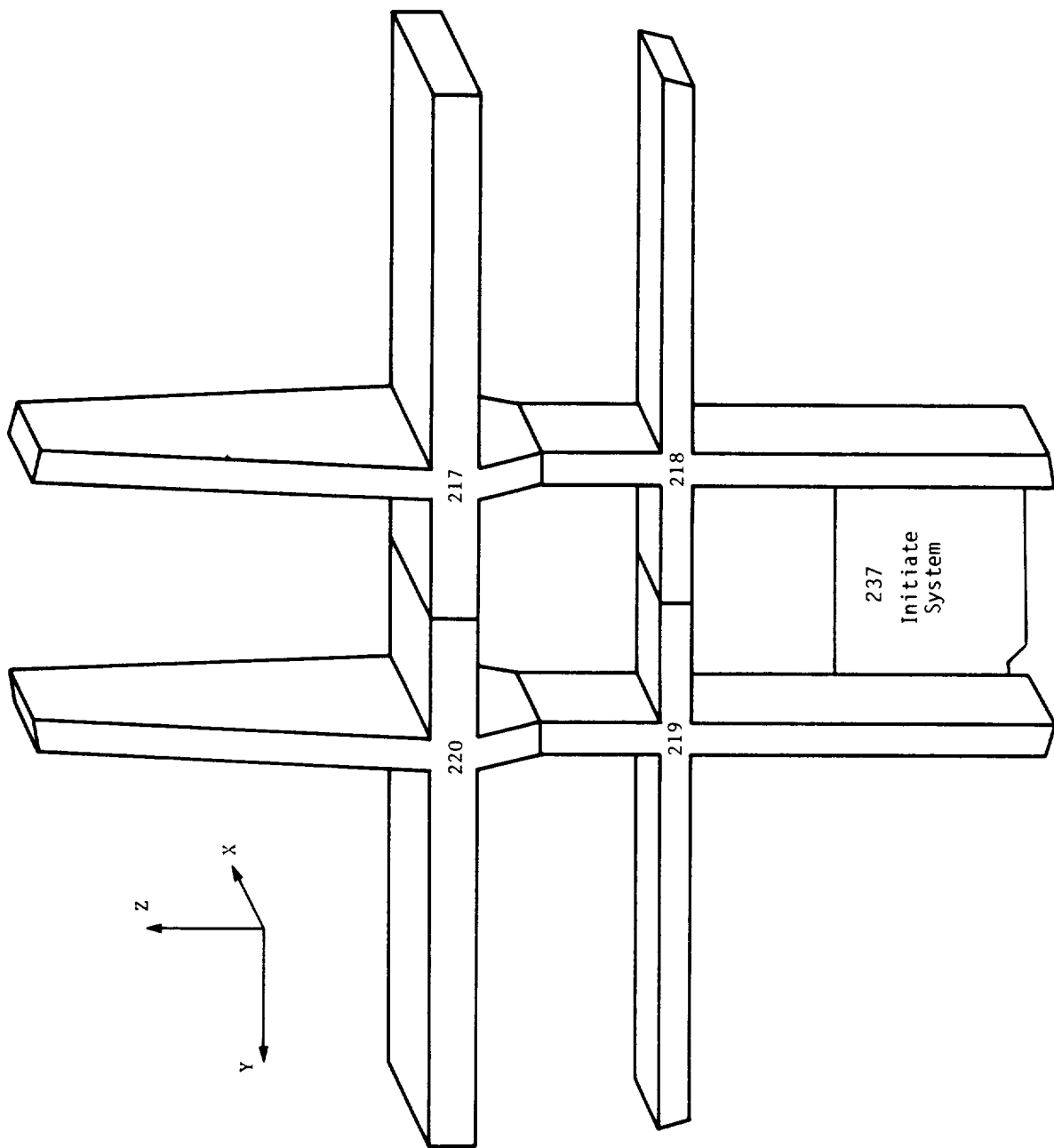


Fig. 21 LDEF Thermal Model, Center Structure Nodes

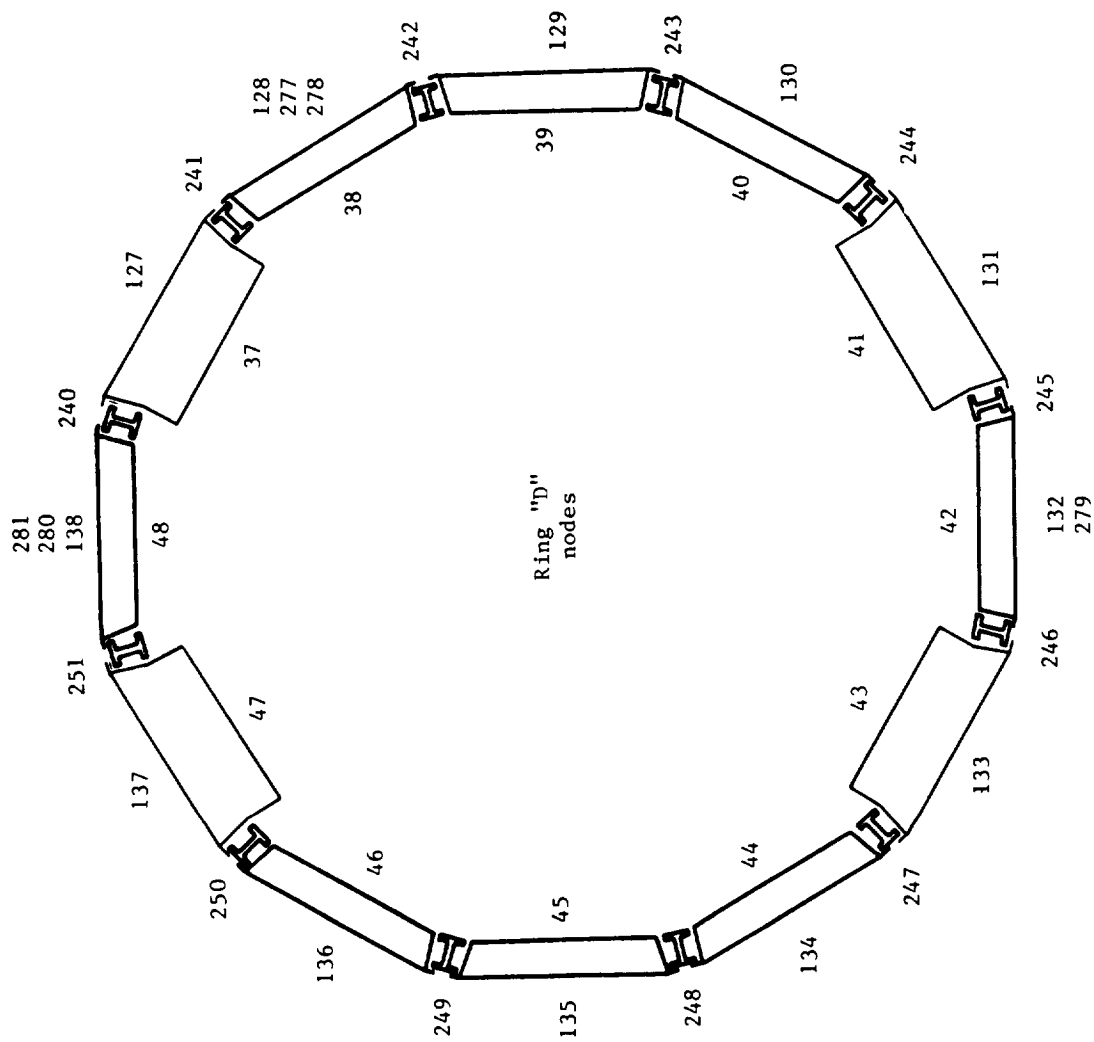


Fig. 22 LDEF Thermal Model, Ring "D" Nodes

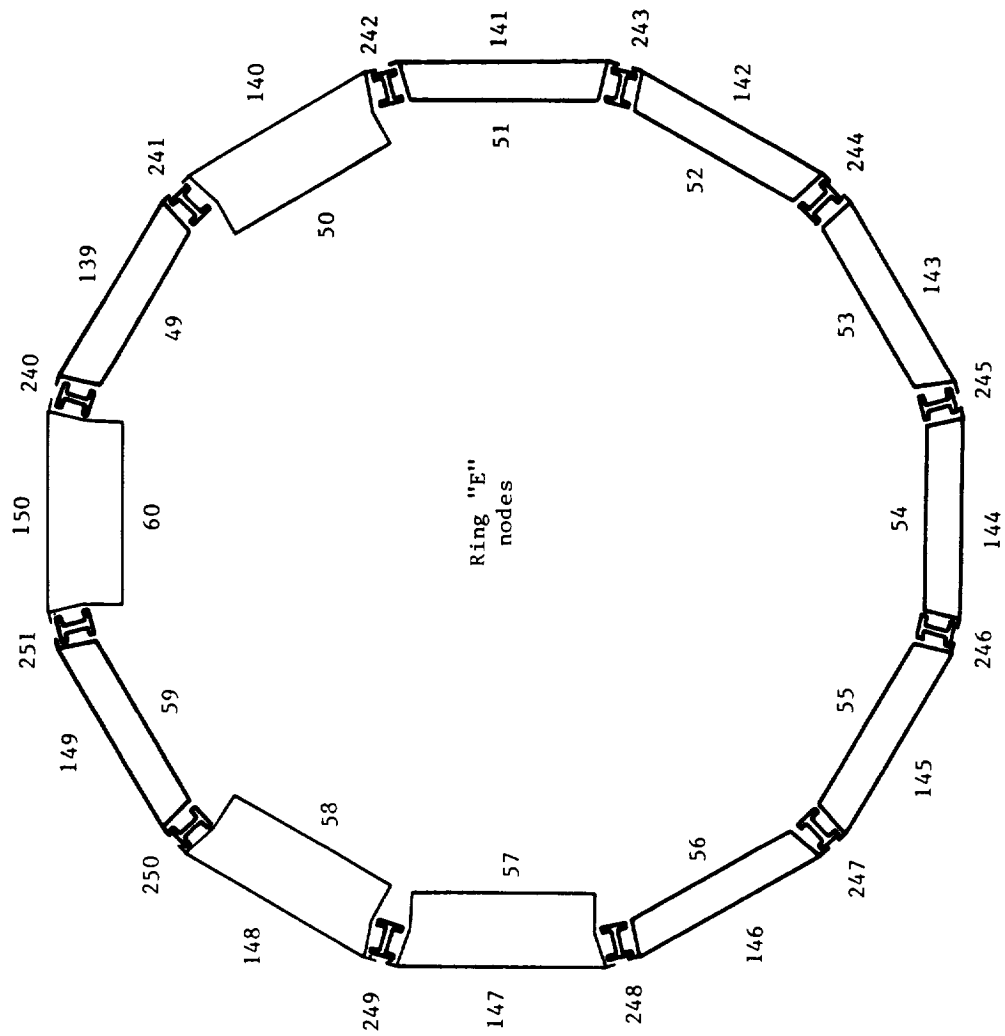


Fig. 23 LDEF Thermal Model, Ring "E" Nodes



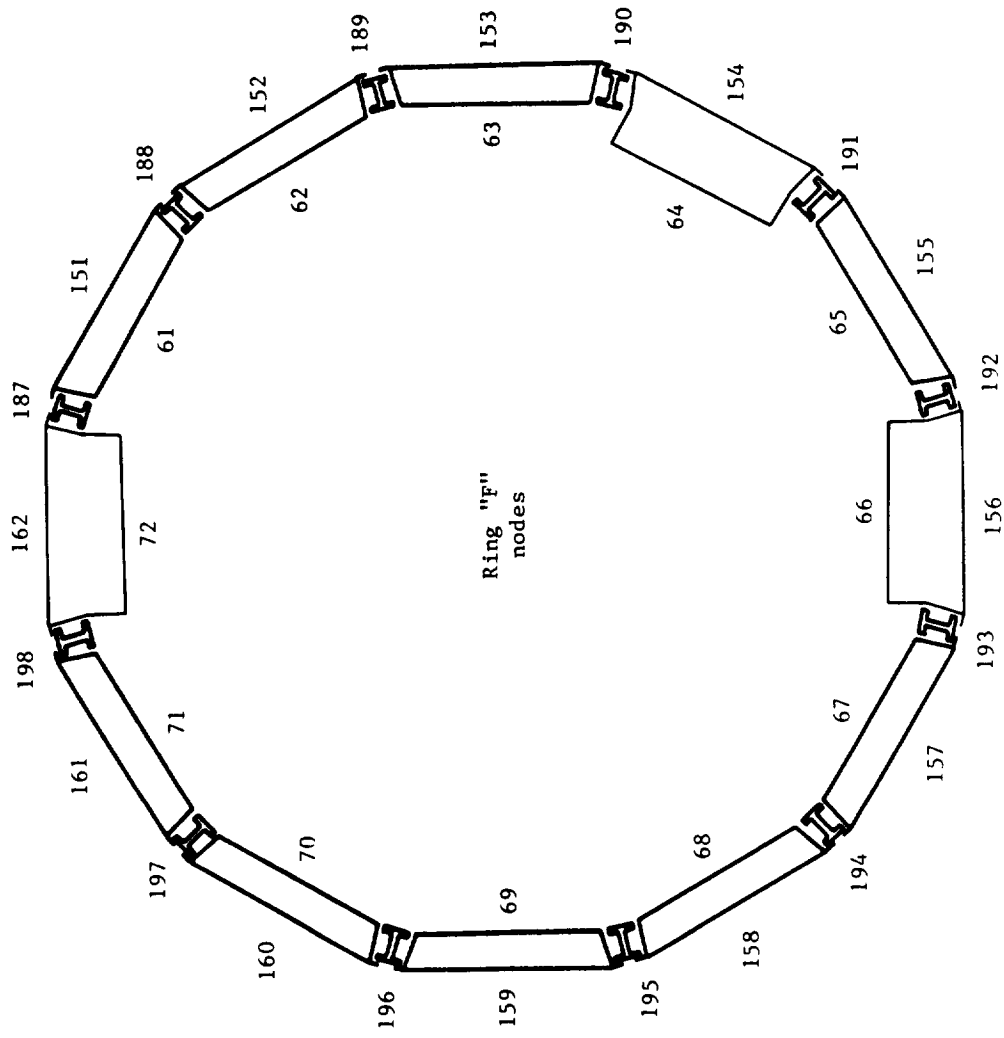


Fig. 24 LDEF Thermal Model, Ring "F" Nodes

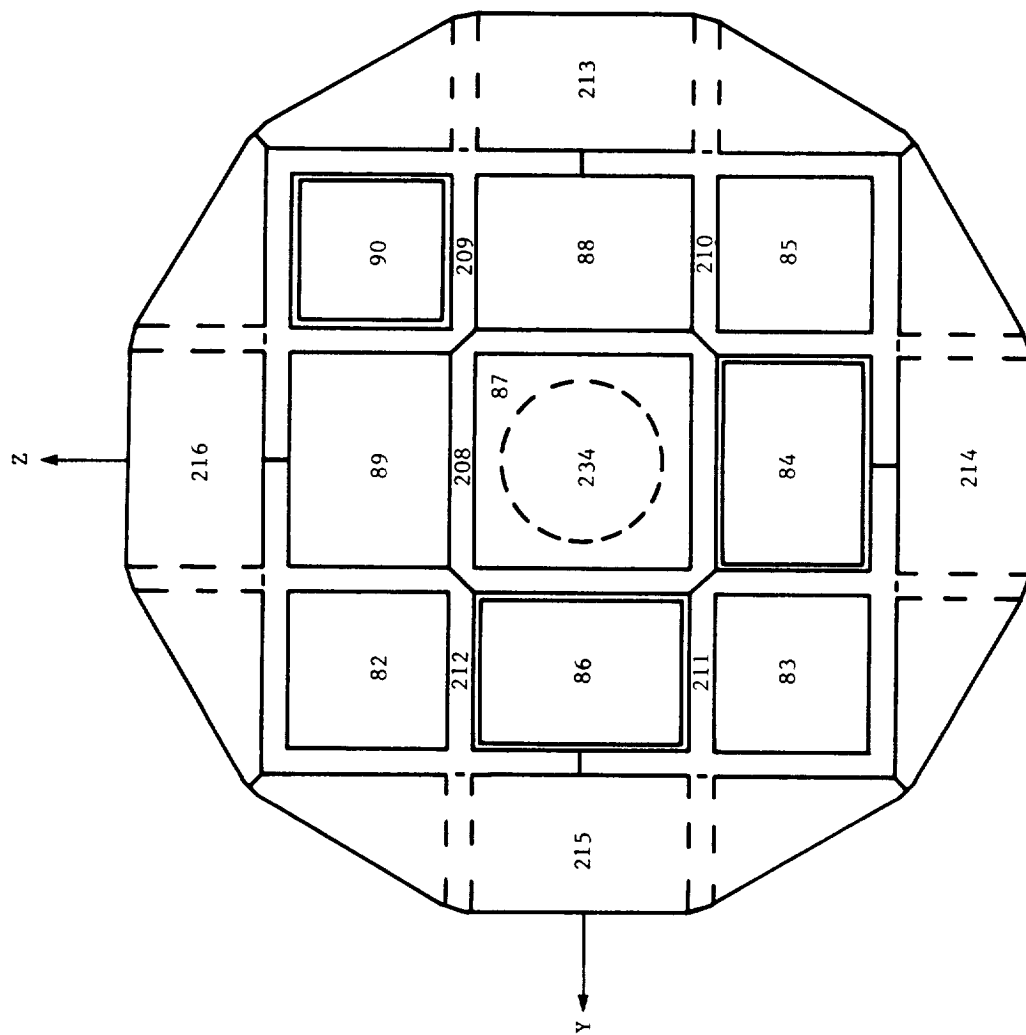


Fig. 25 LDEF Thermal Model, Internal Nodes - Space End

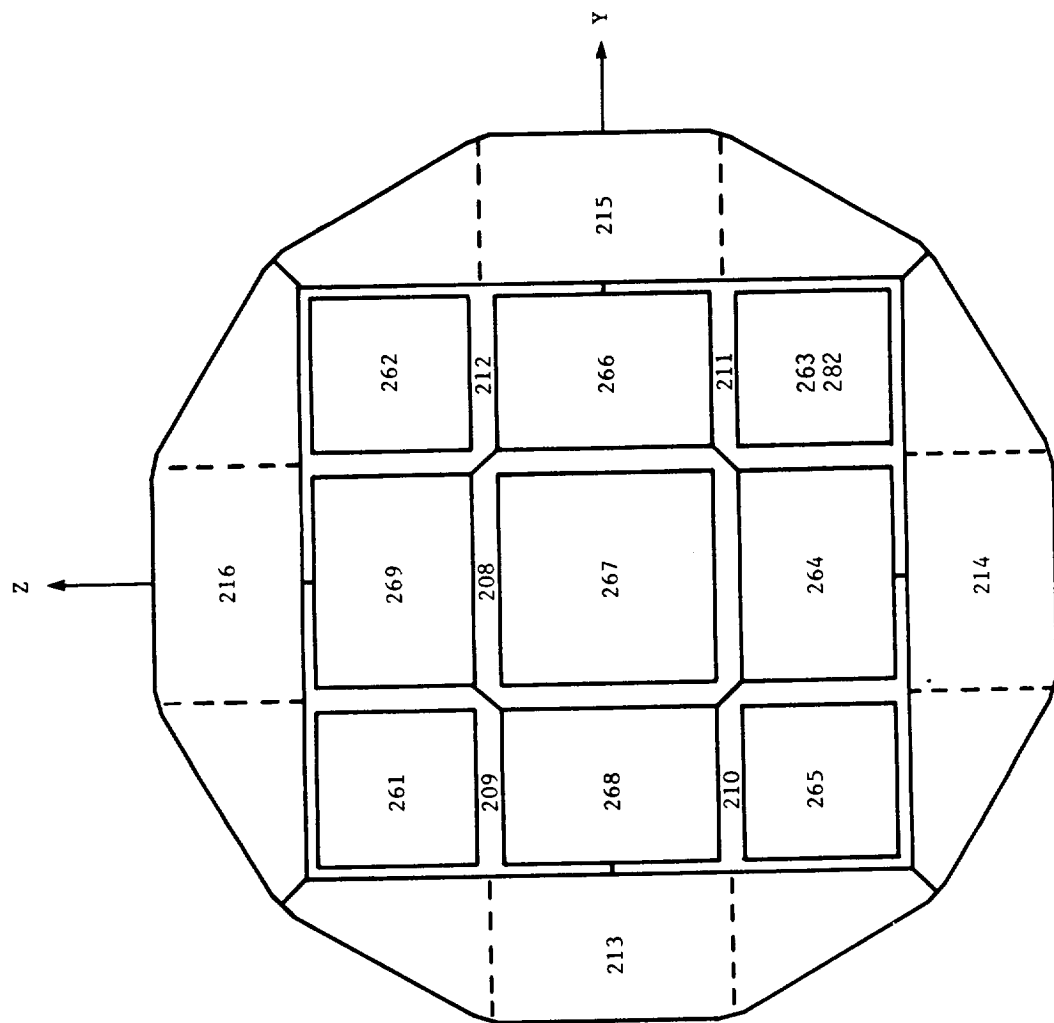


Fig. 26 LDEF Thermal Model, External Nodes - Space End

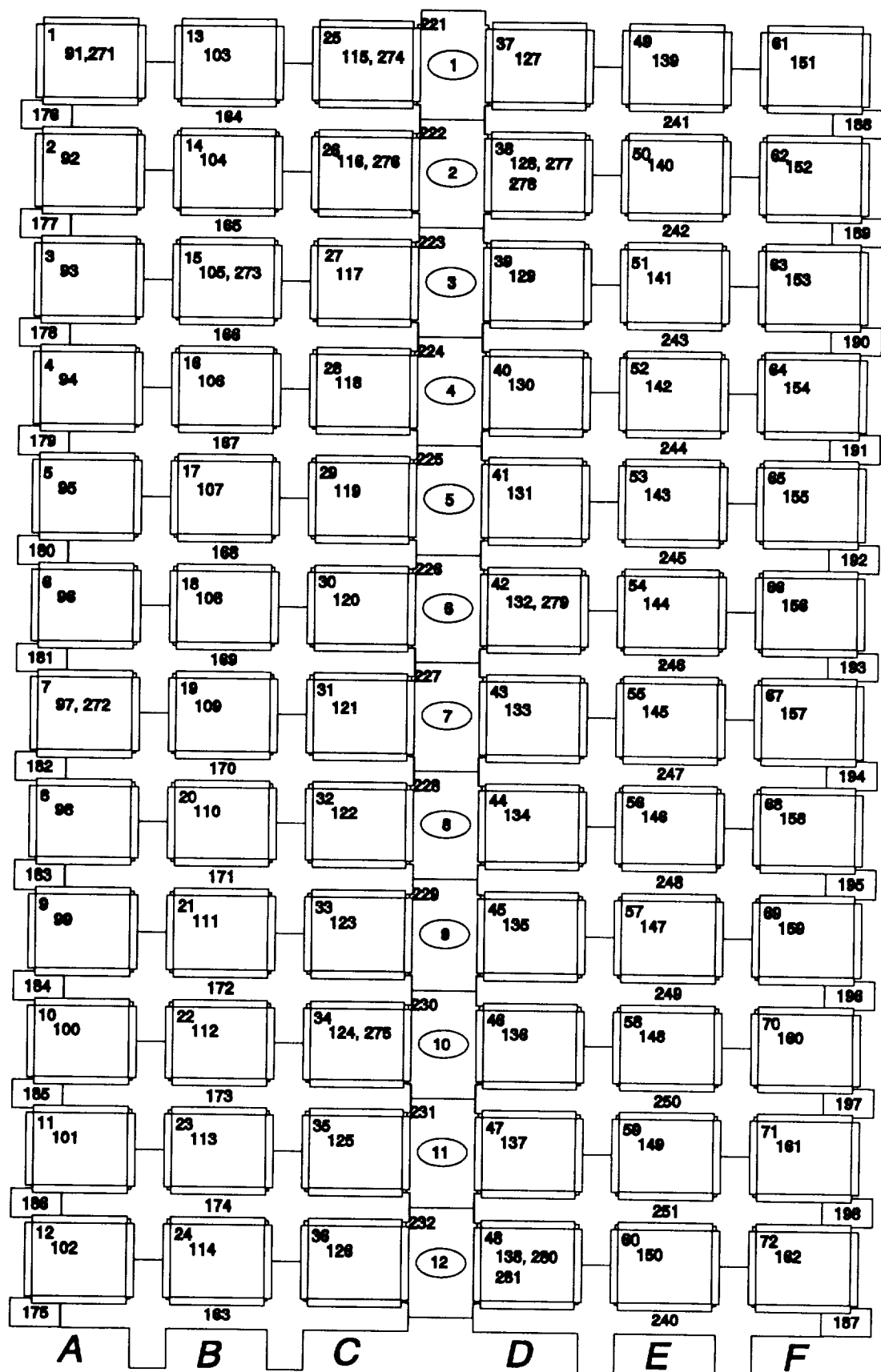


Fig. 27 LDEF PERIPHERY EXTERNAL NODALIZATION

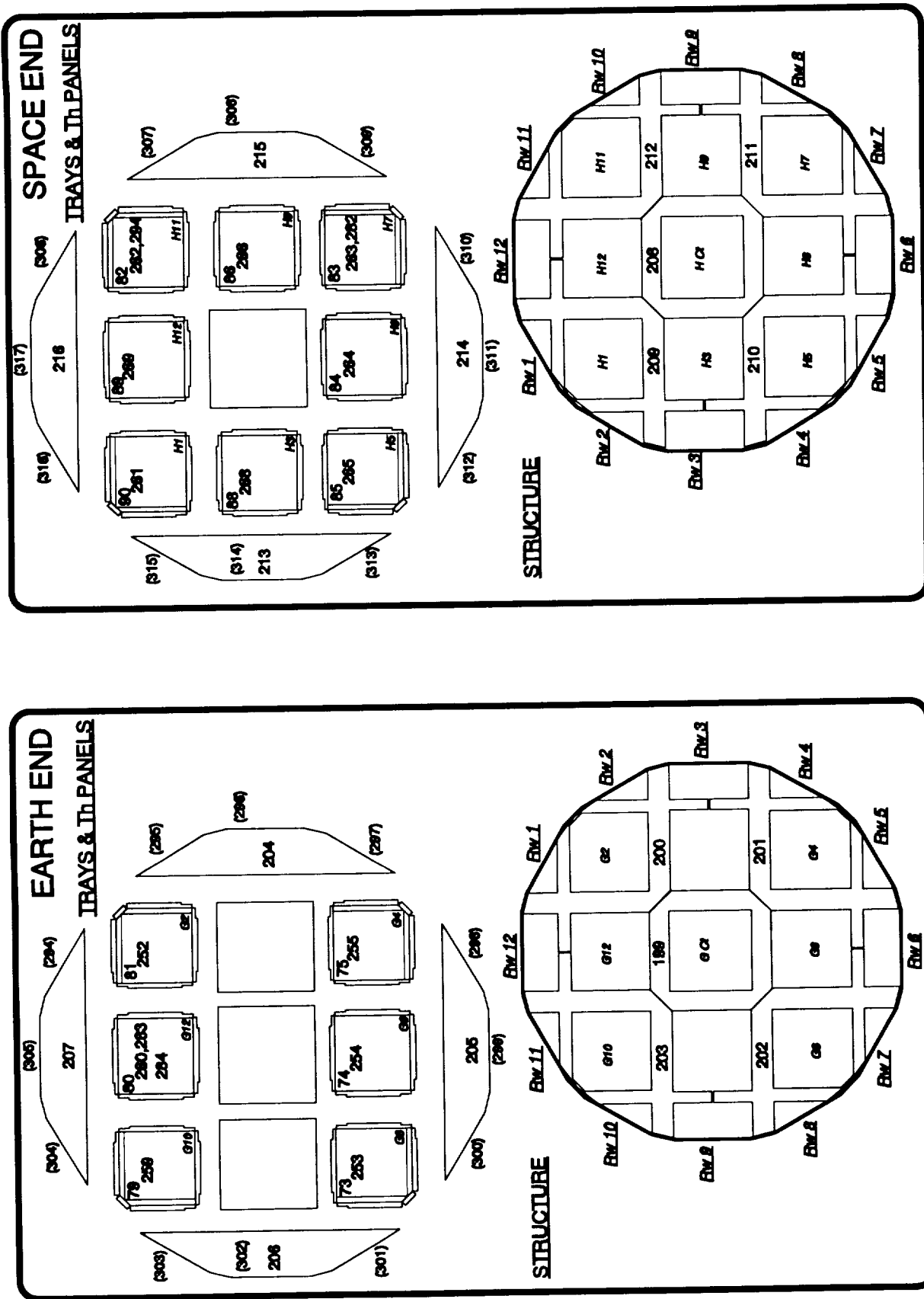
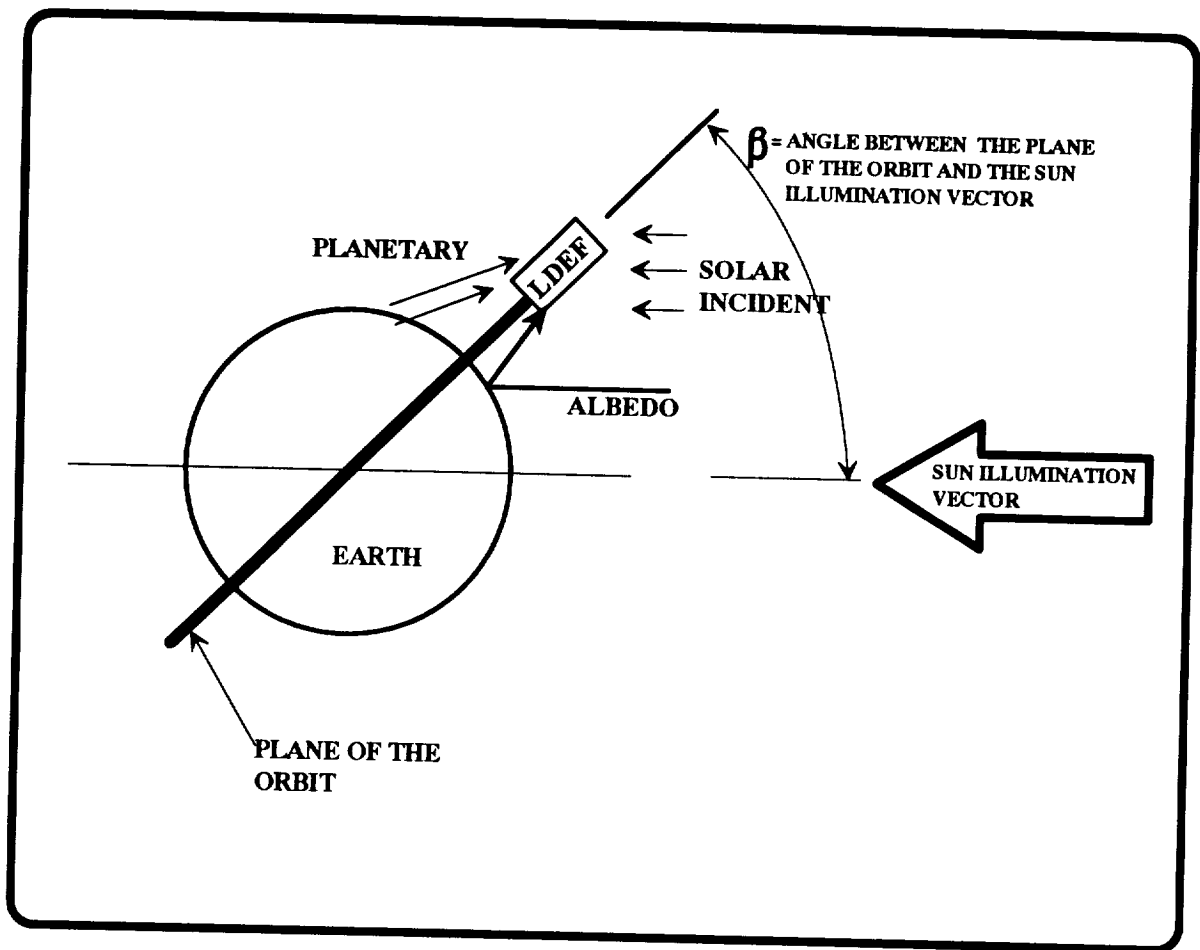


Fig. 28 LDEF END TRAY/STRUCTURE NODE DISTRIBUTION



**BETA ANGLE= ( $\beta$ )** Angle between the plane of the orbit and the sun illumination vector.  
**SOLAR INCIDENT= (BTU/Hr-Ft<sup>2</sup>)** Heat due to direct illumination from the sun.  
**ALBEDO= (BTU/Hr-Ft<sup>2</sup>)** Heat due to the portion of the solar incident energy reflected from the planet into the LDEF.  
**PLANETARY= (BTU/Hr-Ft<sup>2</sup>)** Heat due to energy emitted from the planet.

**Fig. 29 LDEF Beta Angle Definition.**

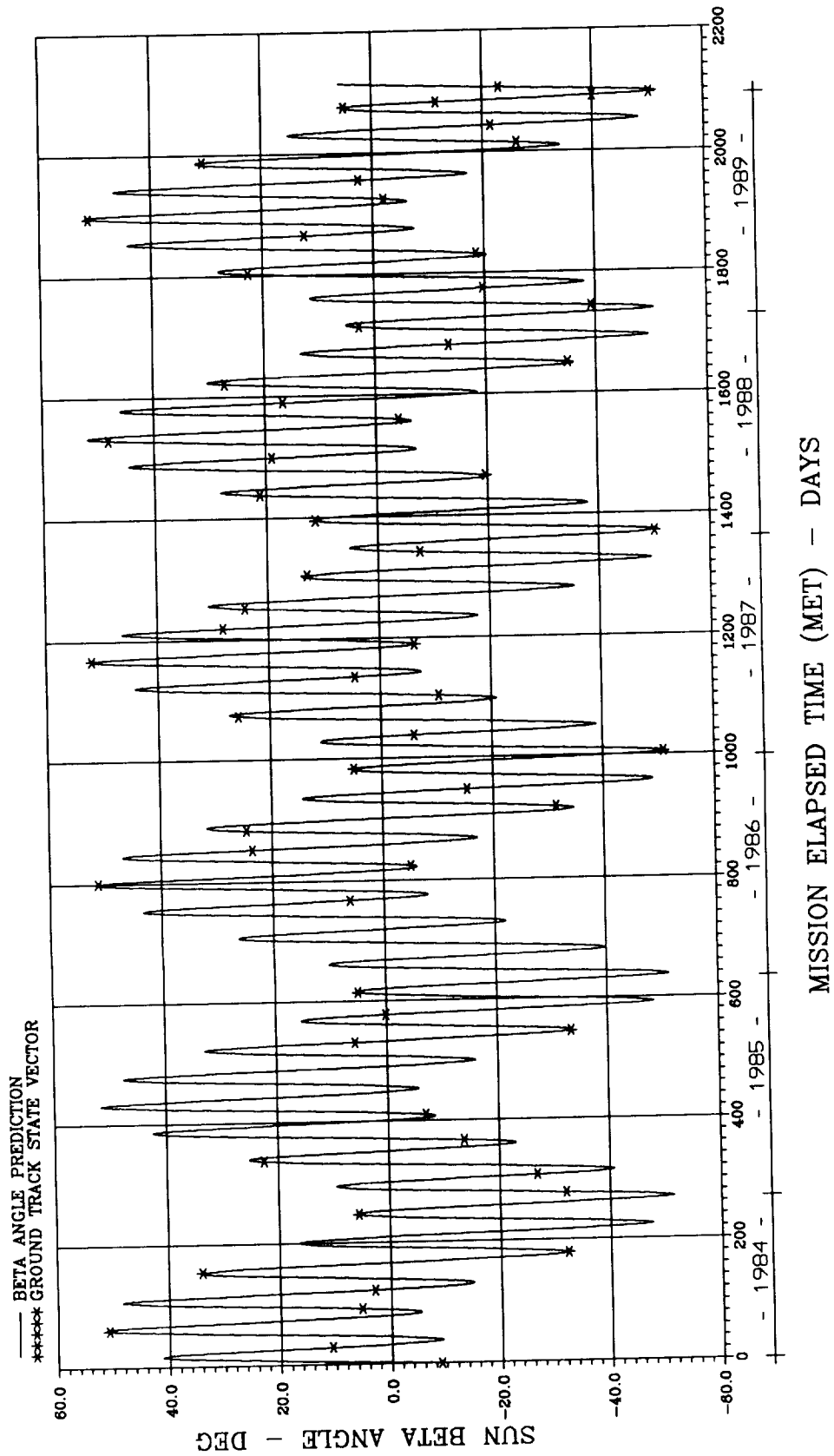


Fig. 30 LDEF BETA ANGLE HISTORY: APRIL 7, 1984 - JANUARY 12, 1990.

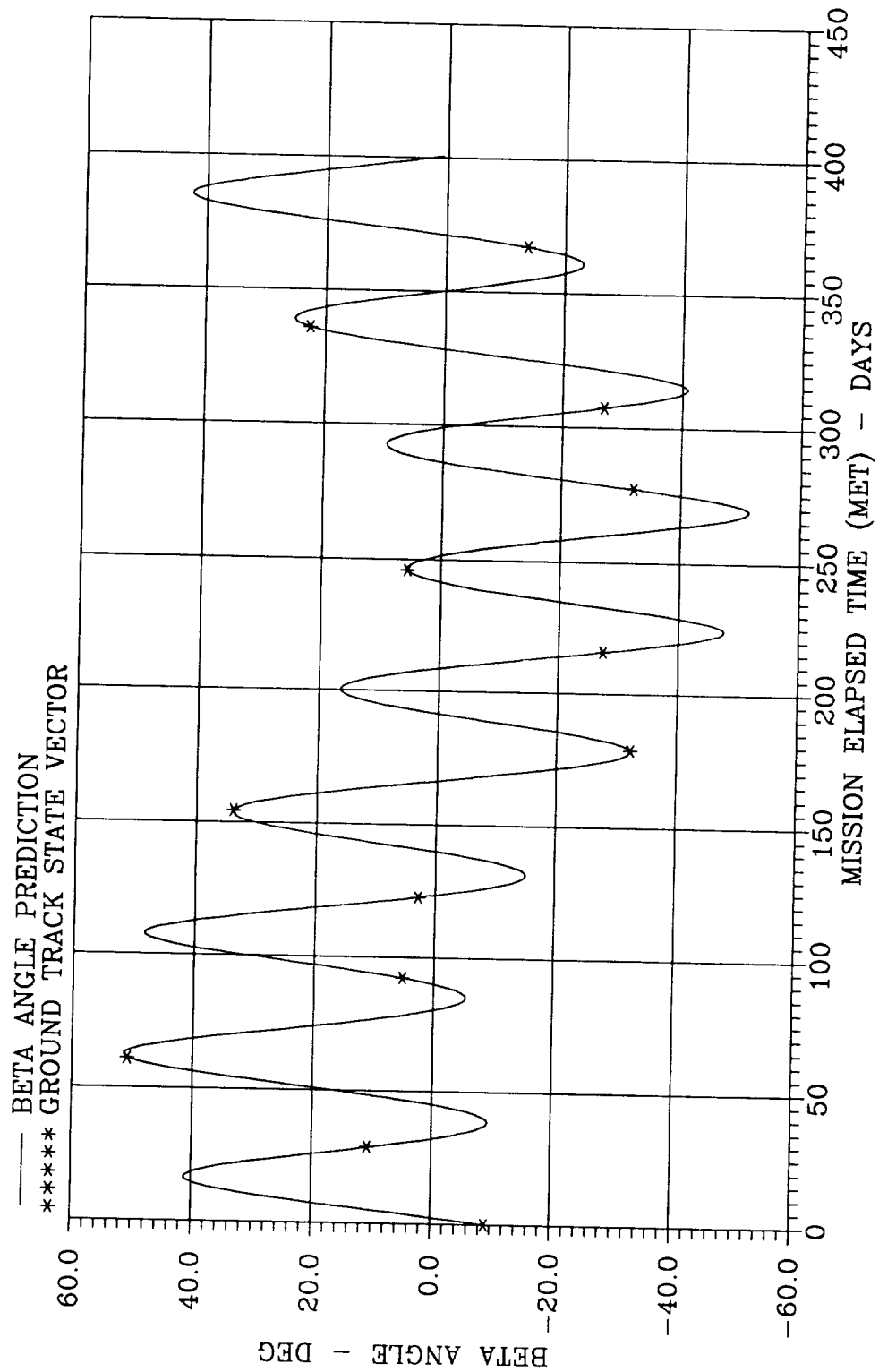


Fig. 31 LDEF BETA ANGLE HISTORY: APRIL 7, 1984 - MAY 13, 1985.



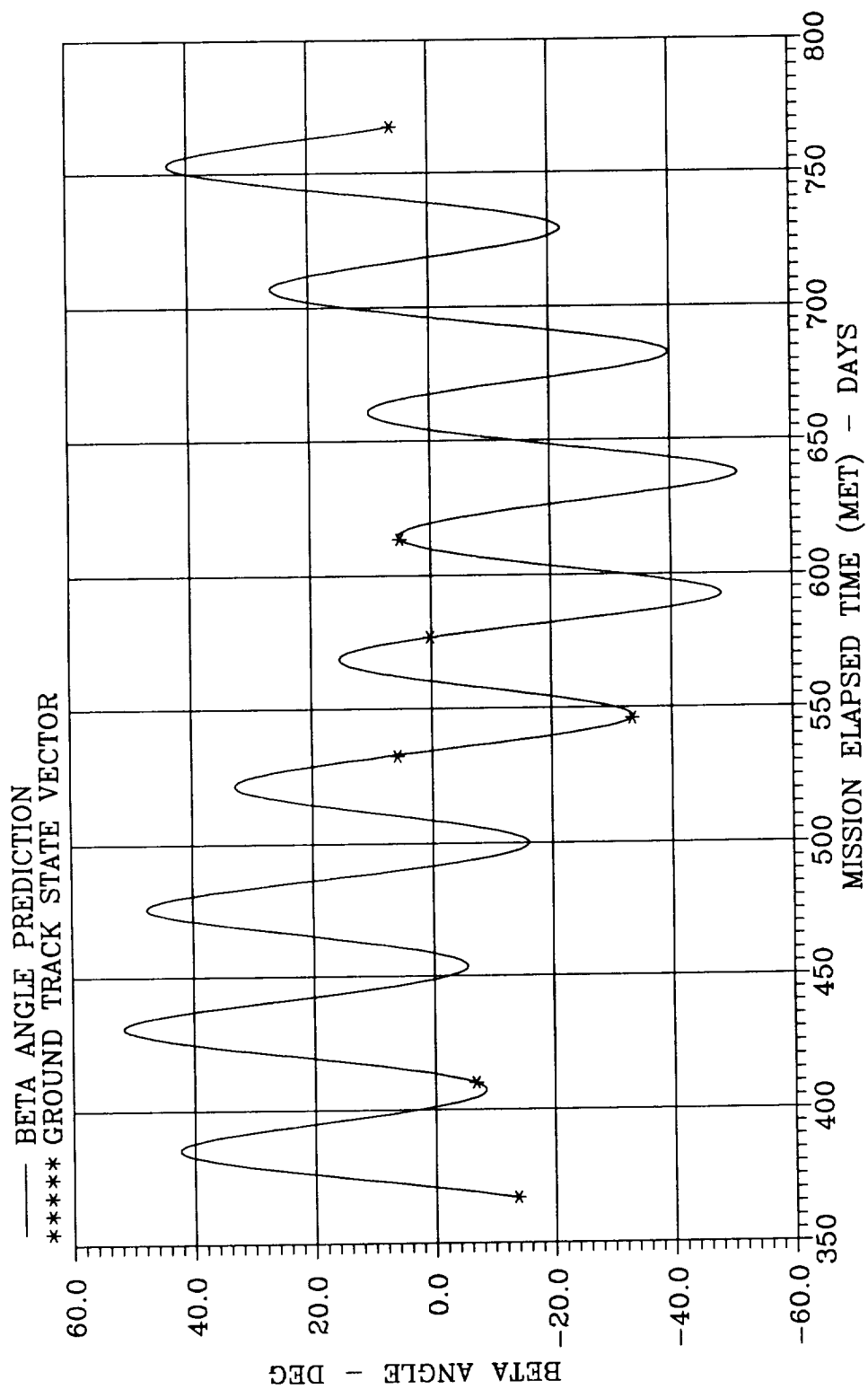


Fig. 32 LDEF BETA ANGLE HISTORY: APRIL 9, 1985 - MAY 14, 1986.

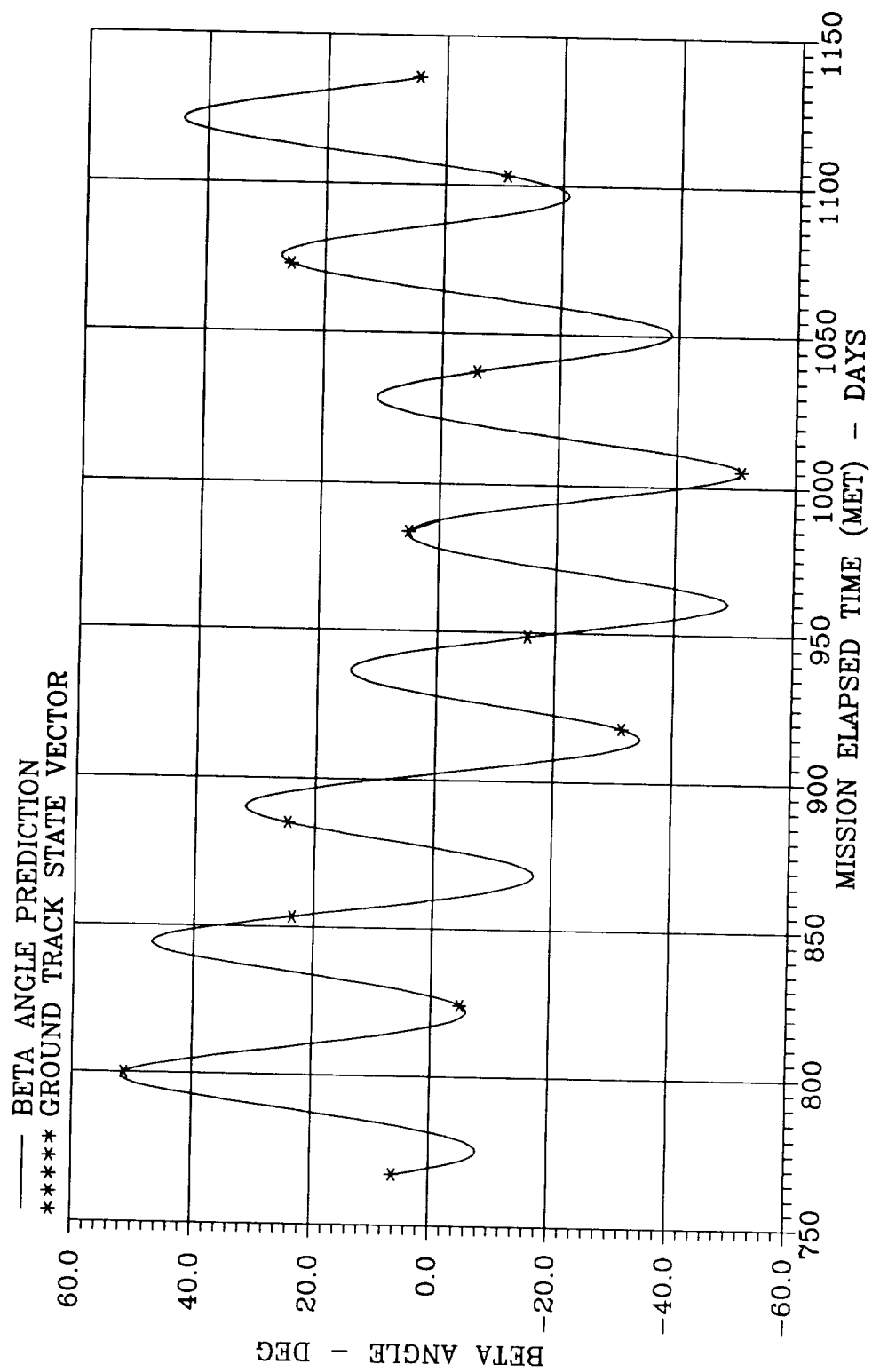


Fig. 33 LDEF BETA ANGLE HISTORY: MAY 14, 1986 - MAY 18, 1987.

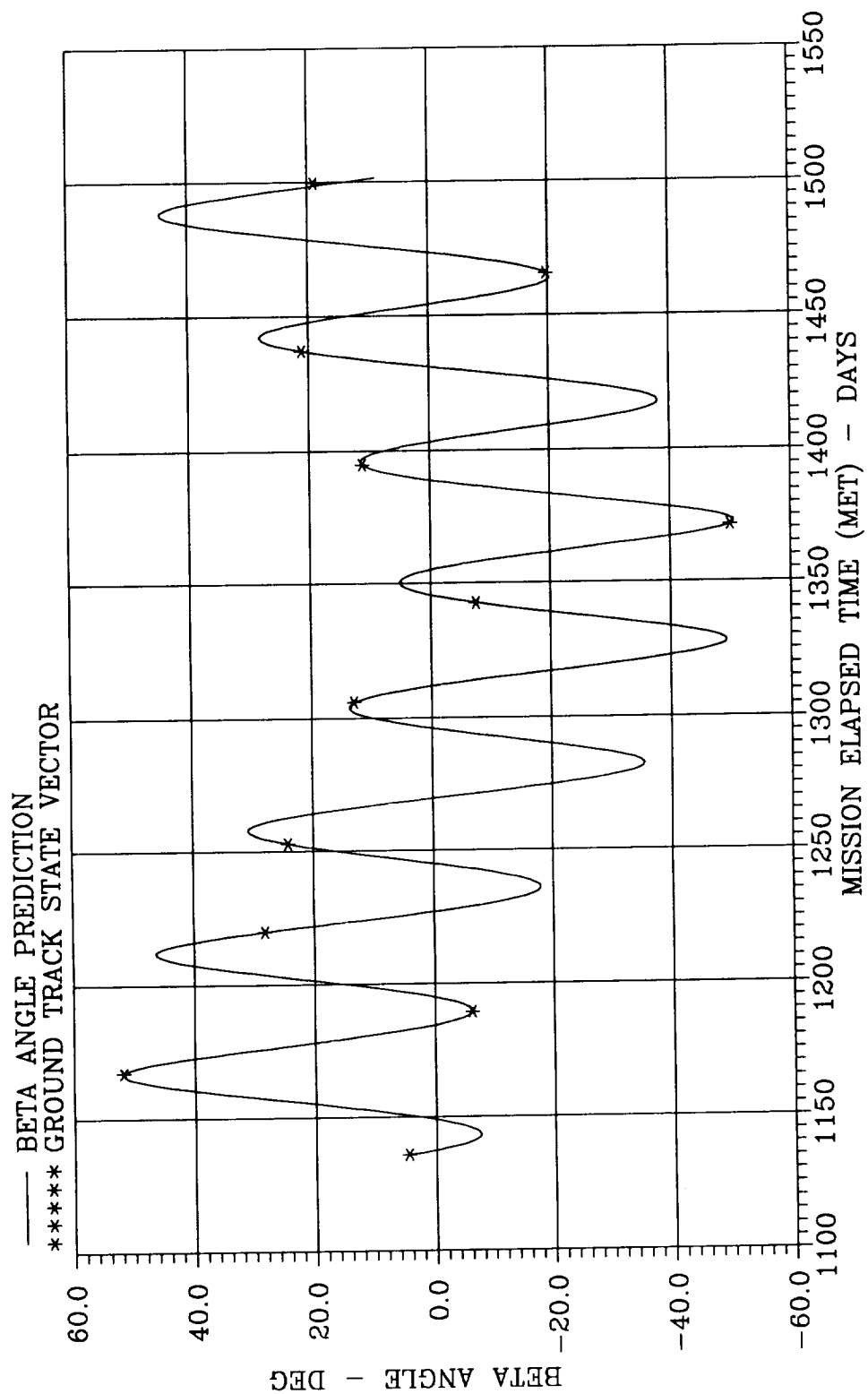


Fig. 34 LDEF BETA ANGLE HISTORY: MAY 18, 1987 - MAY 18, 1988.

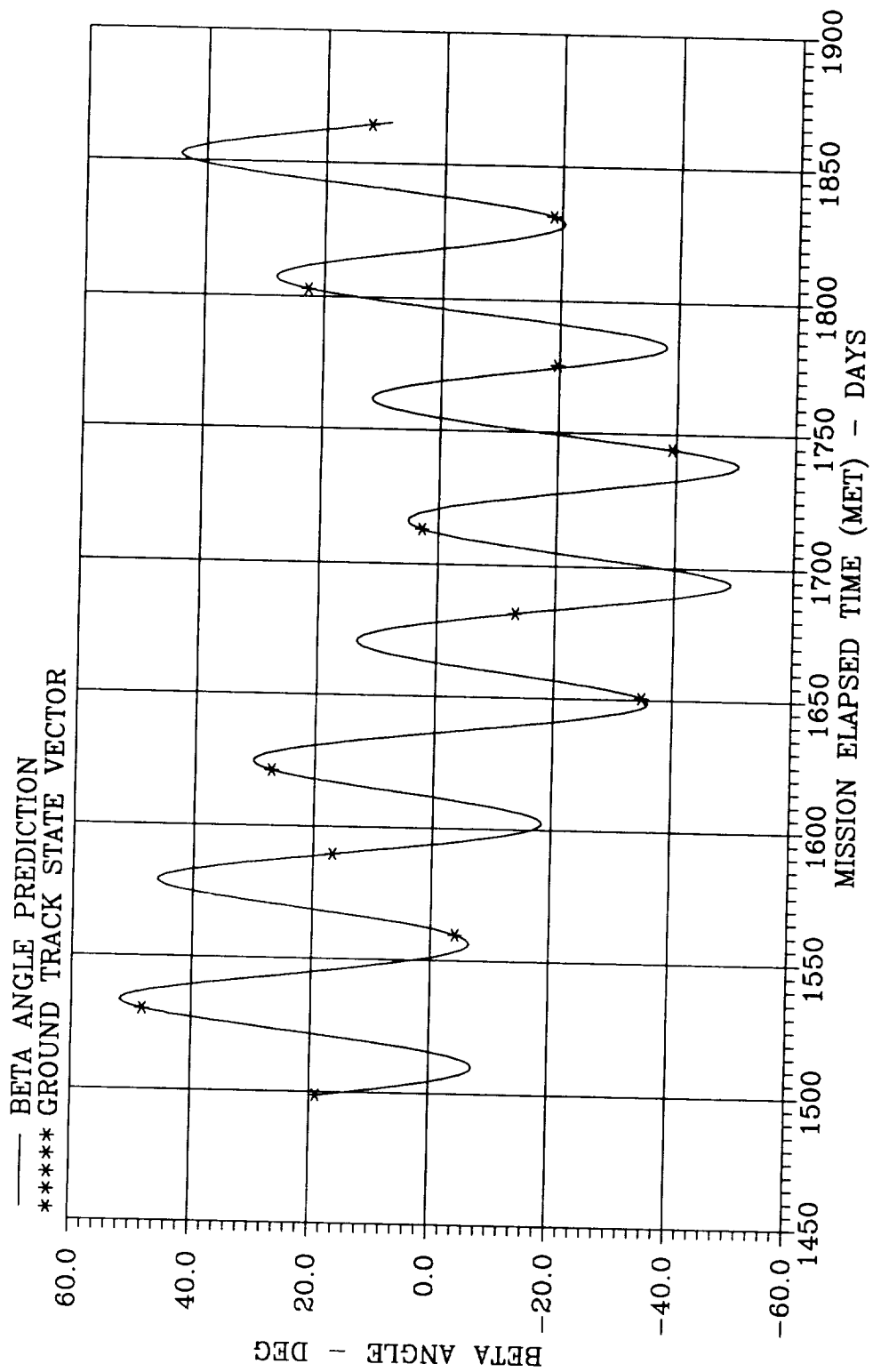


Fig. 35 LDEF BETA ANGLE HISTORY: MAY 15, 1988 - MAY 15, 1989.

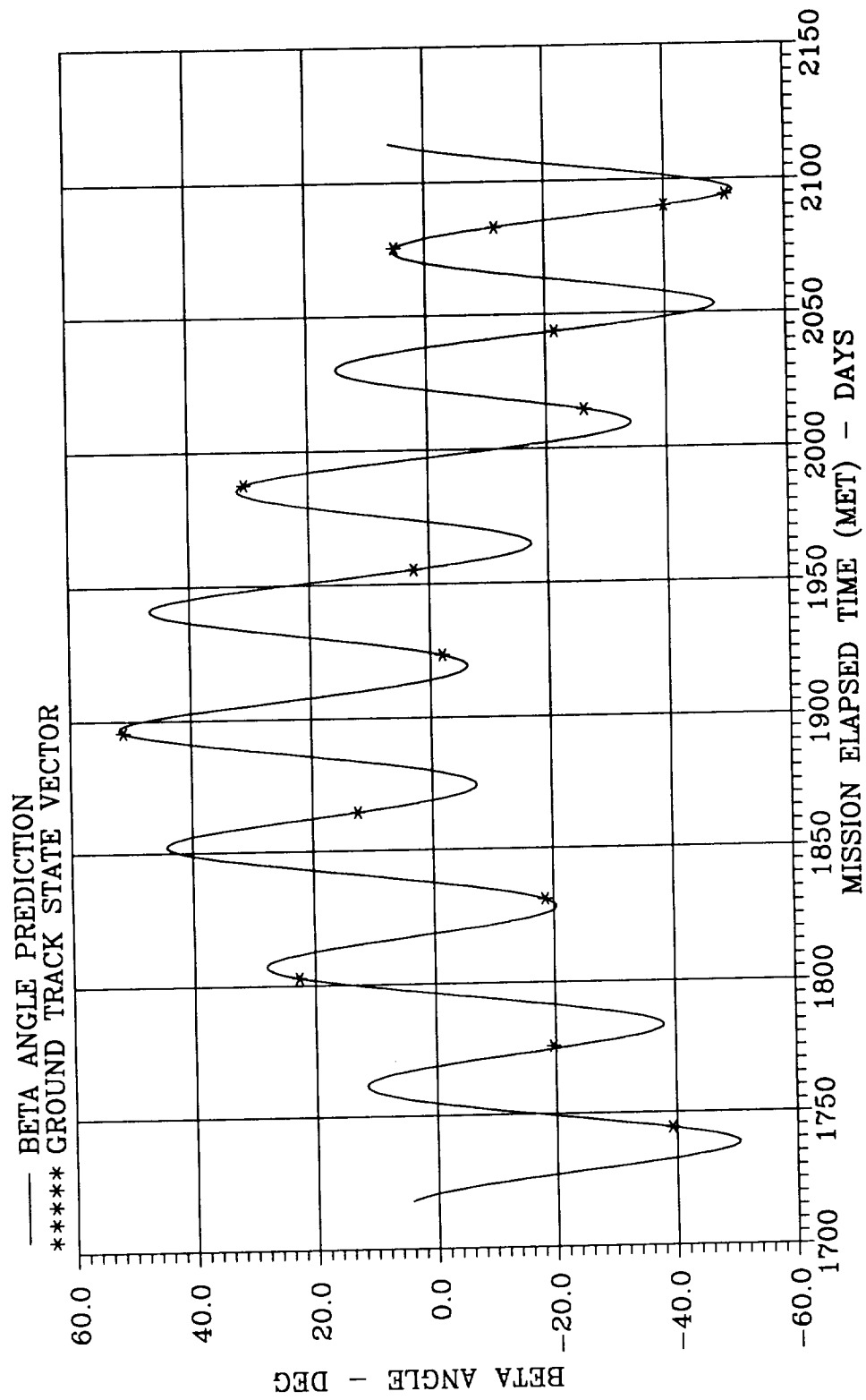


Fig. 36 LDEF BETA ANGLE HISTORY: DECEMBER 20, 1988 - JANUARY 12, 1990.

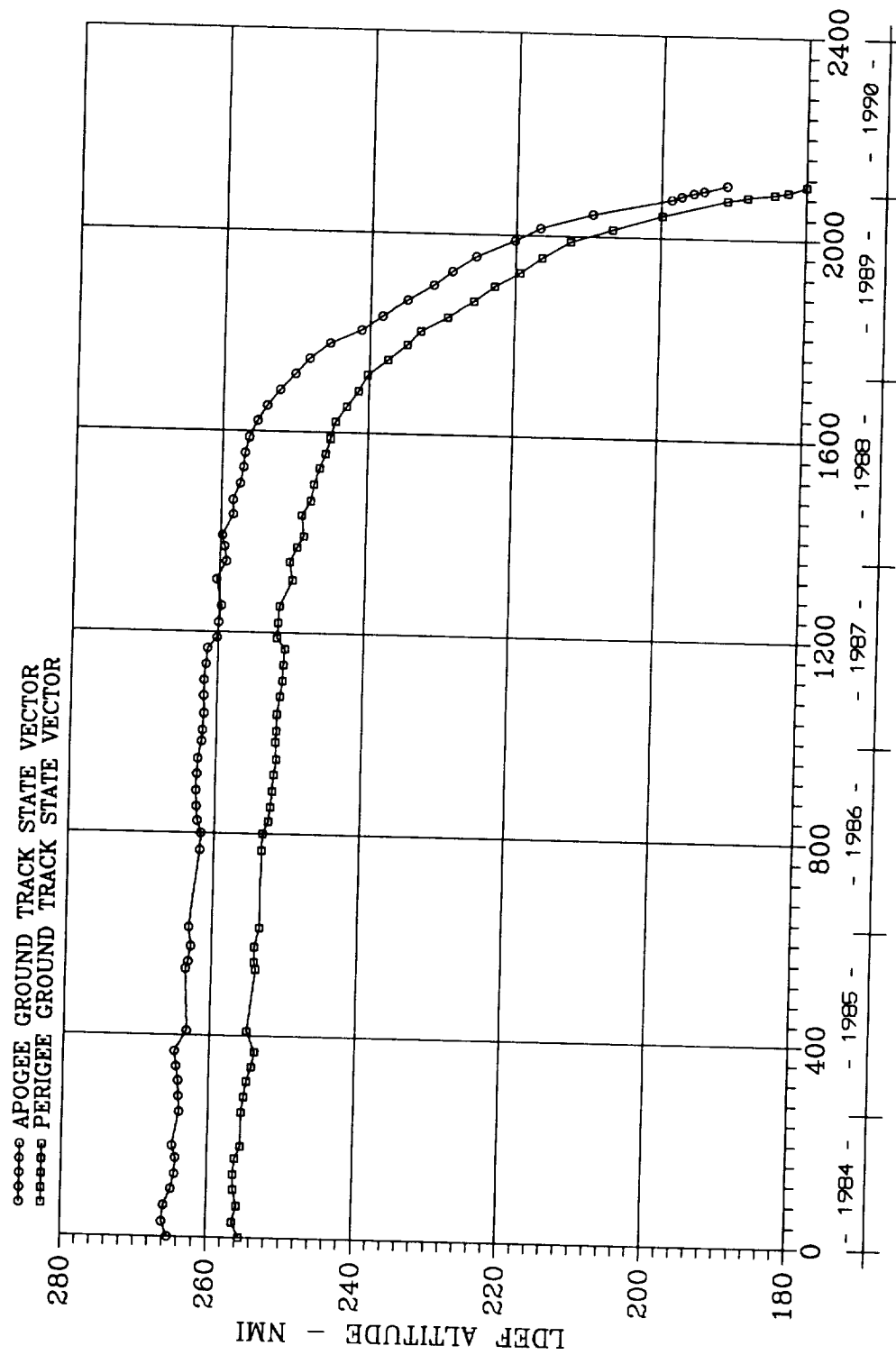


Fig. 37 LDEF ALTITUDE HISTORY: APRIL 7, 1984 - JANUARY 12, 1990.

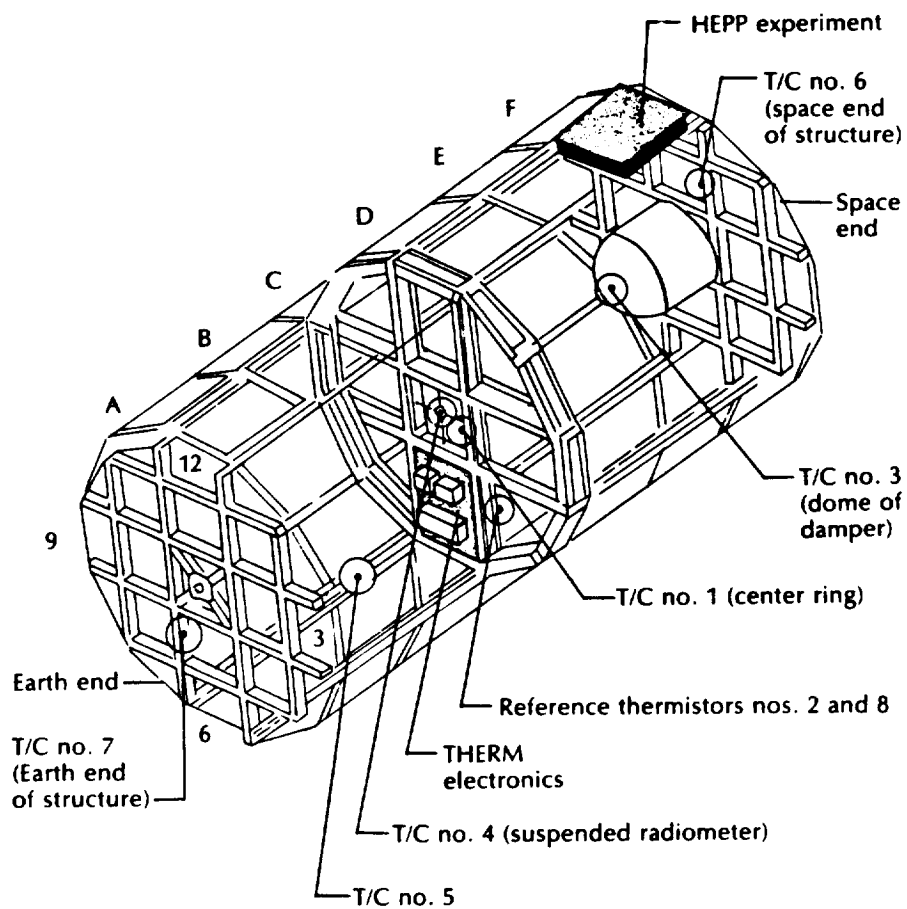


Fig. 38 Location of THERM Hardware on the LDEF

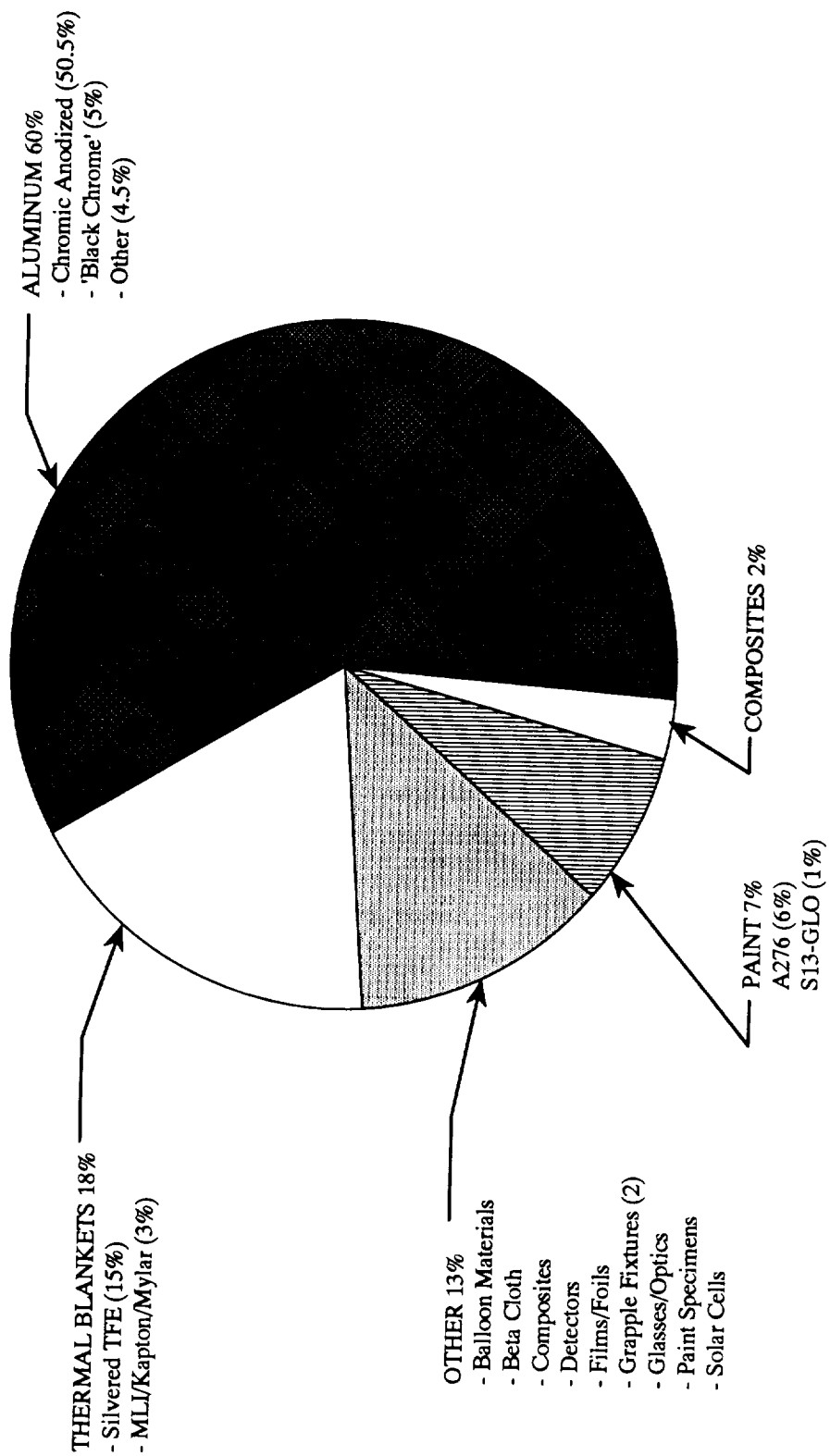


Fig. 39 LDEF External Surface Coating Distribution



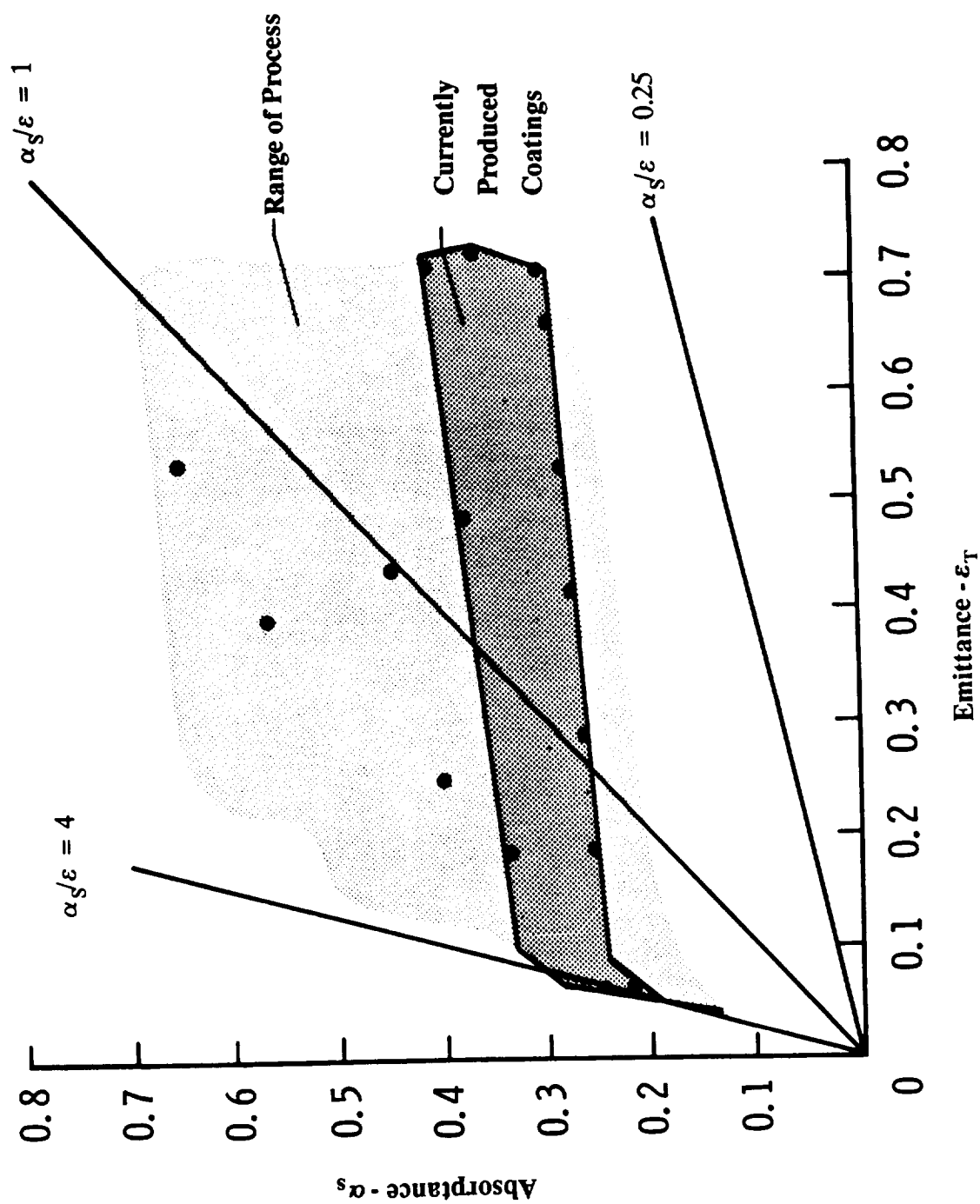


Fig. 40 Variable Anodic Thermal Control Coating Property Range.

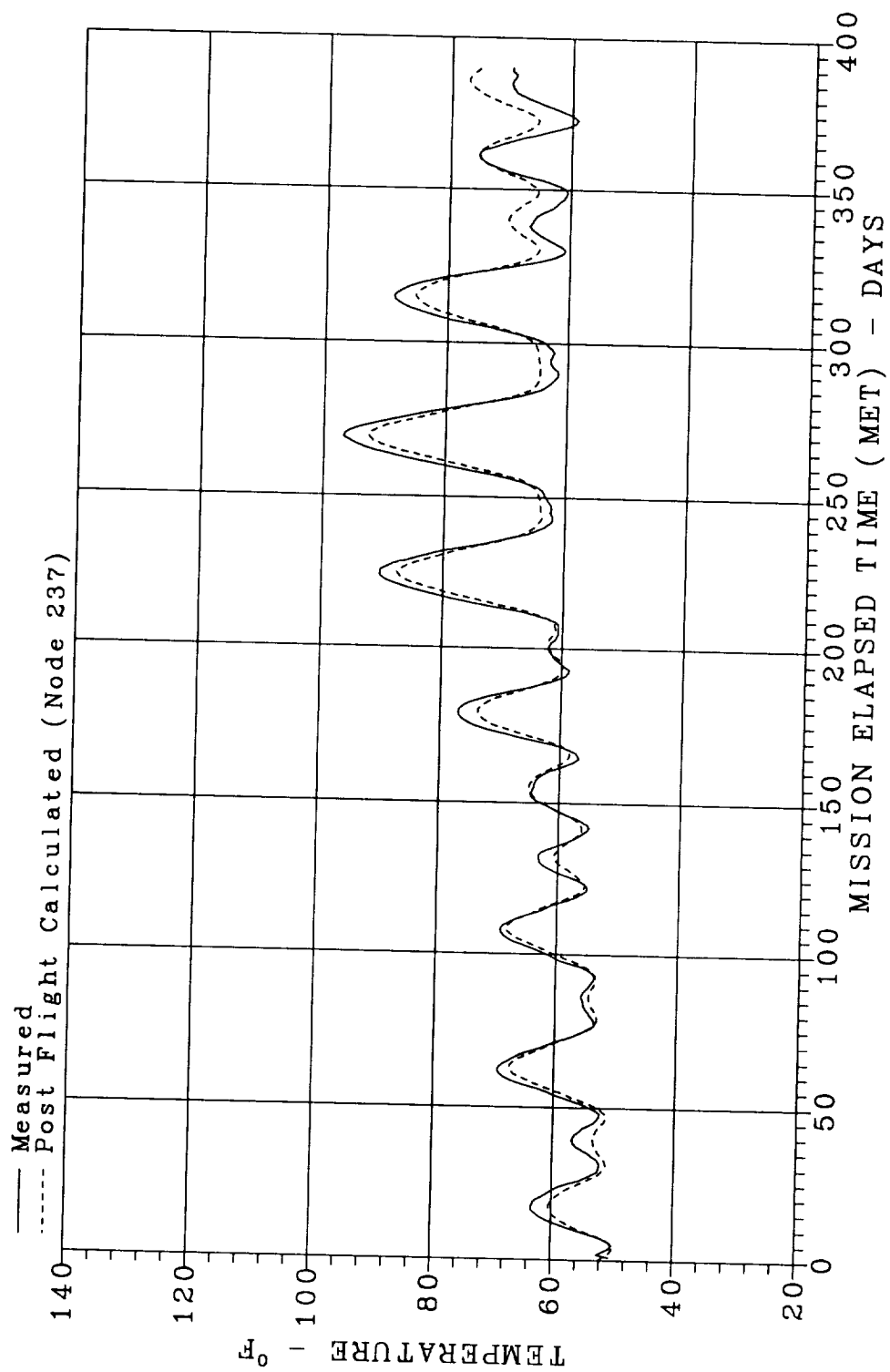


Figure 41 THERM Thermistor Data vs LDEF Post Flight Thermal Model.

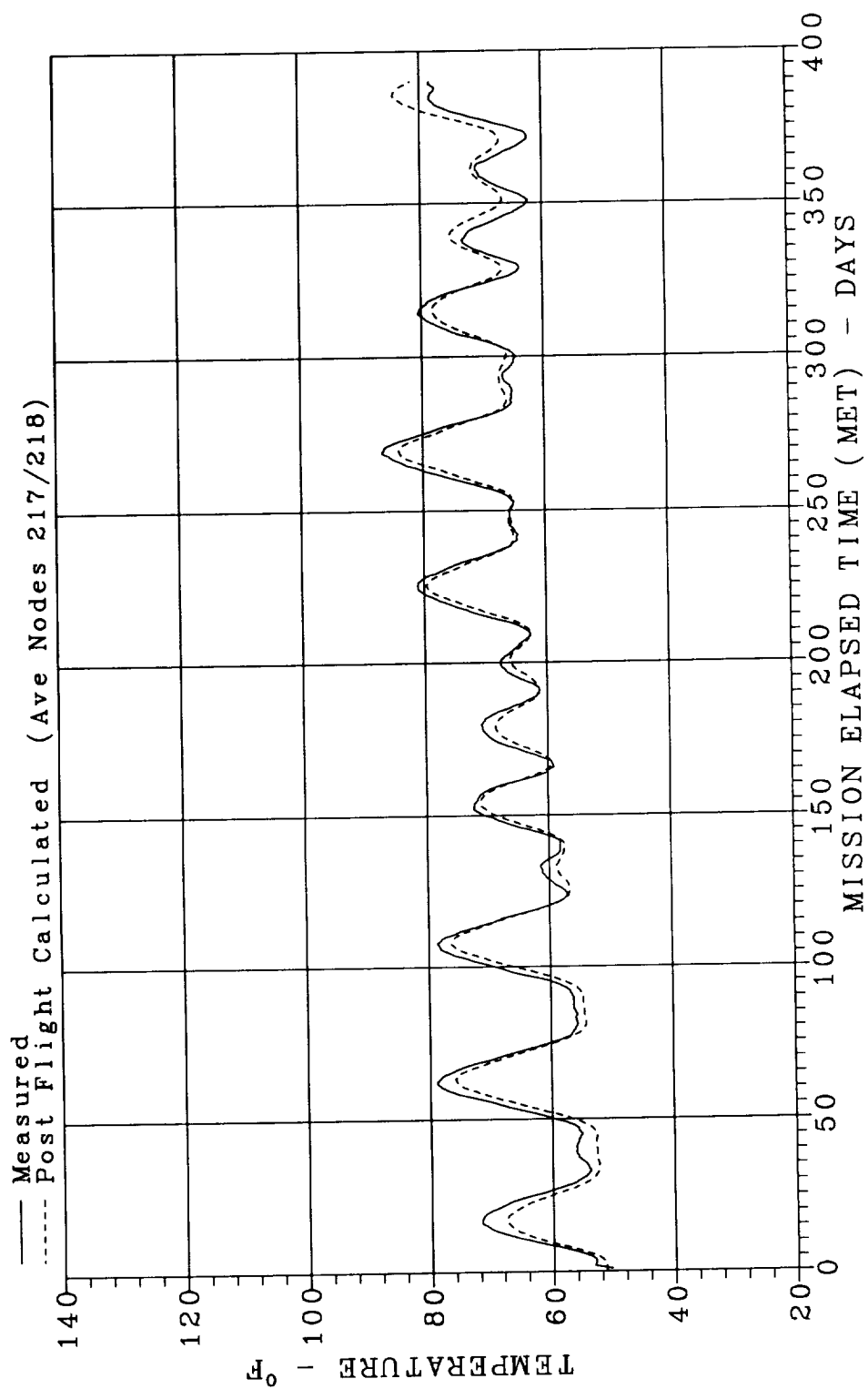


Figure 42 THERM Center Ring Data vs LDEF Post Flight Thermal Model.

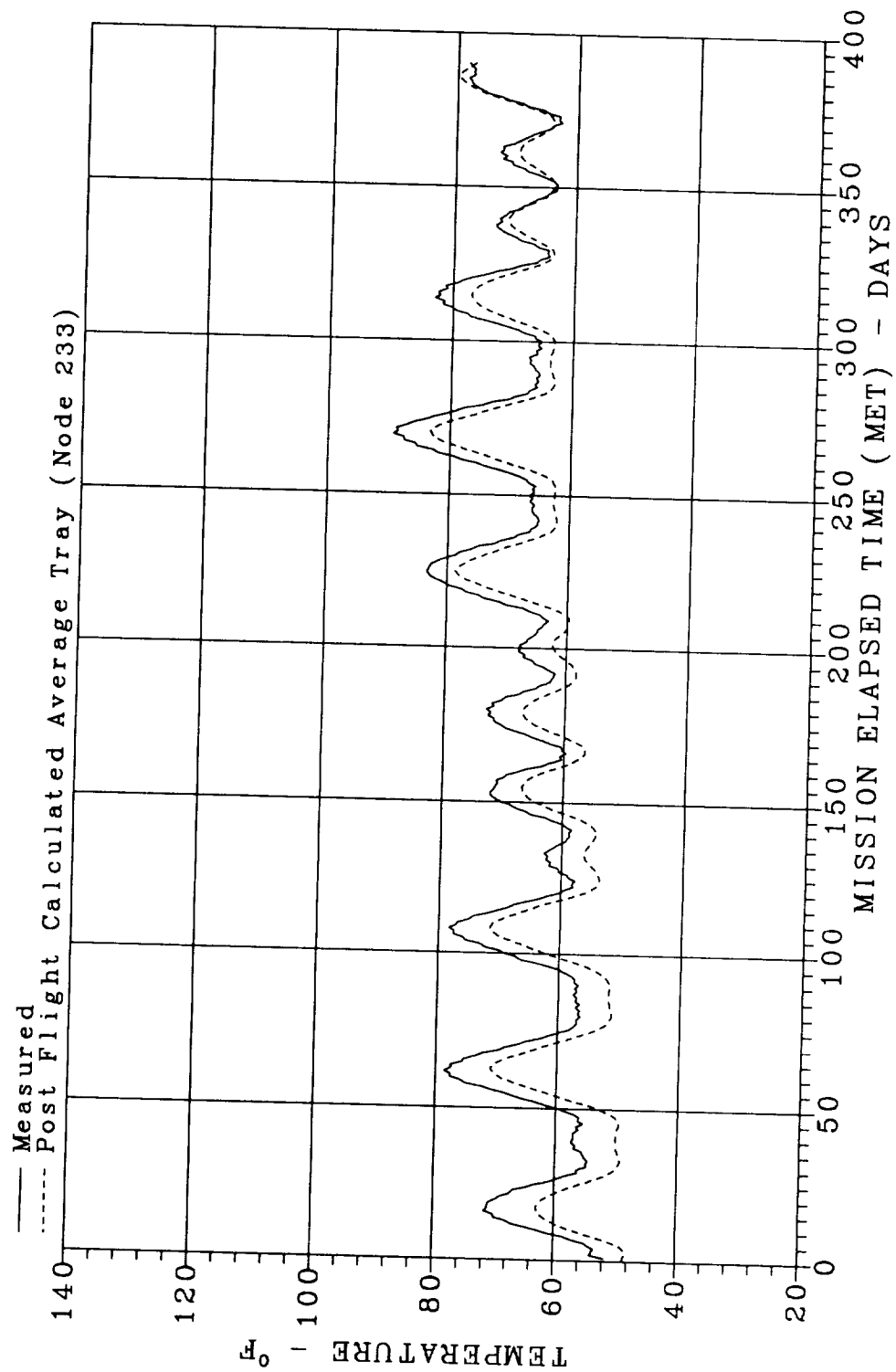


Figure 43 THERM Radiometer Data vs LDEF Post Flight Thermal Model.

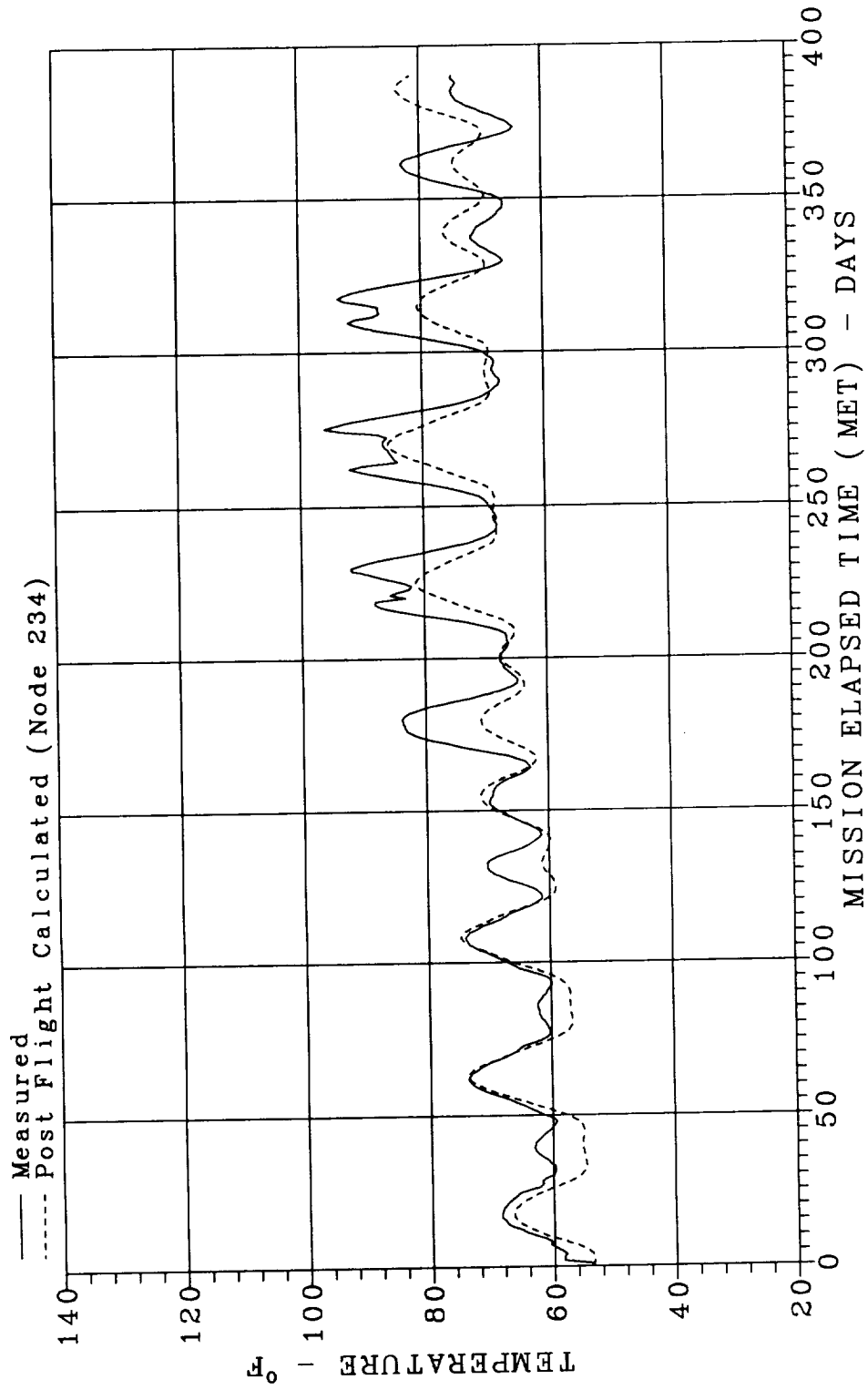


Figure 44 THERM Damper Dome Data vs LDEF Post Flight Thermal Model.

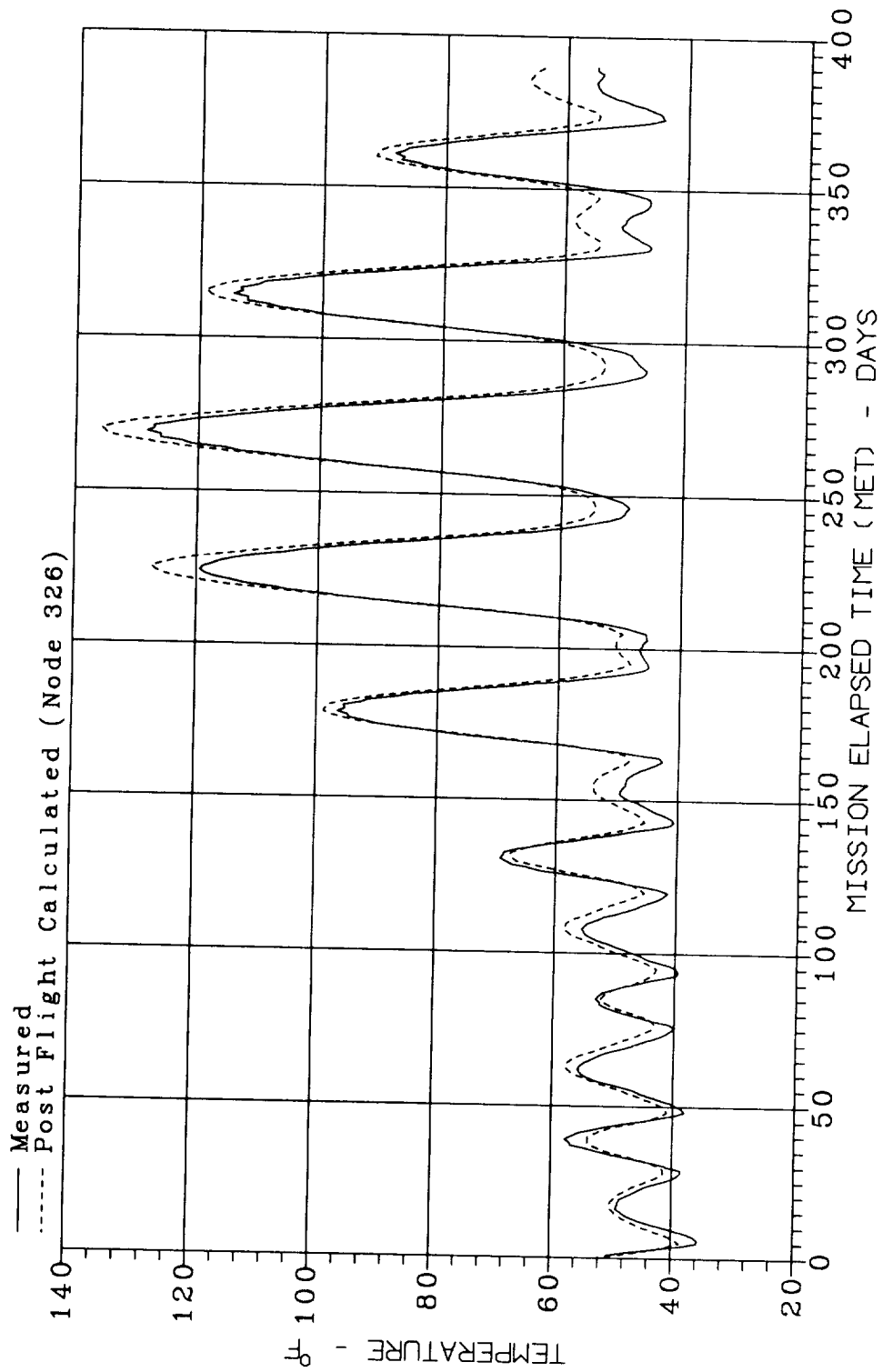


Figure 45 THERM Row 6 Longeron Data vs LDEF Post Flight Thermal Model.

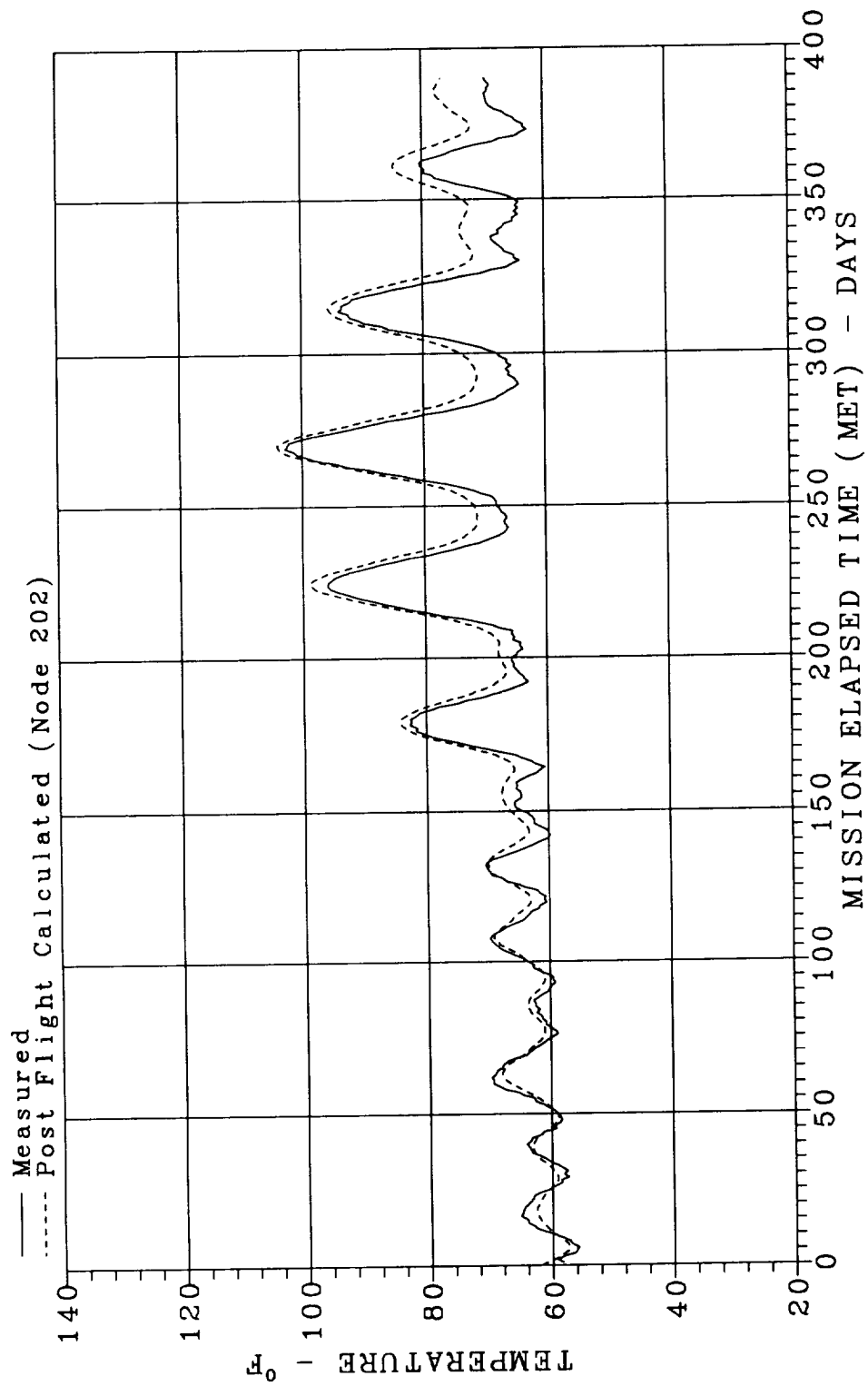


Figure 46 THERM Earth End Data vs LDEF Post Flight Thermal Model.

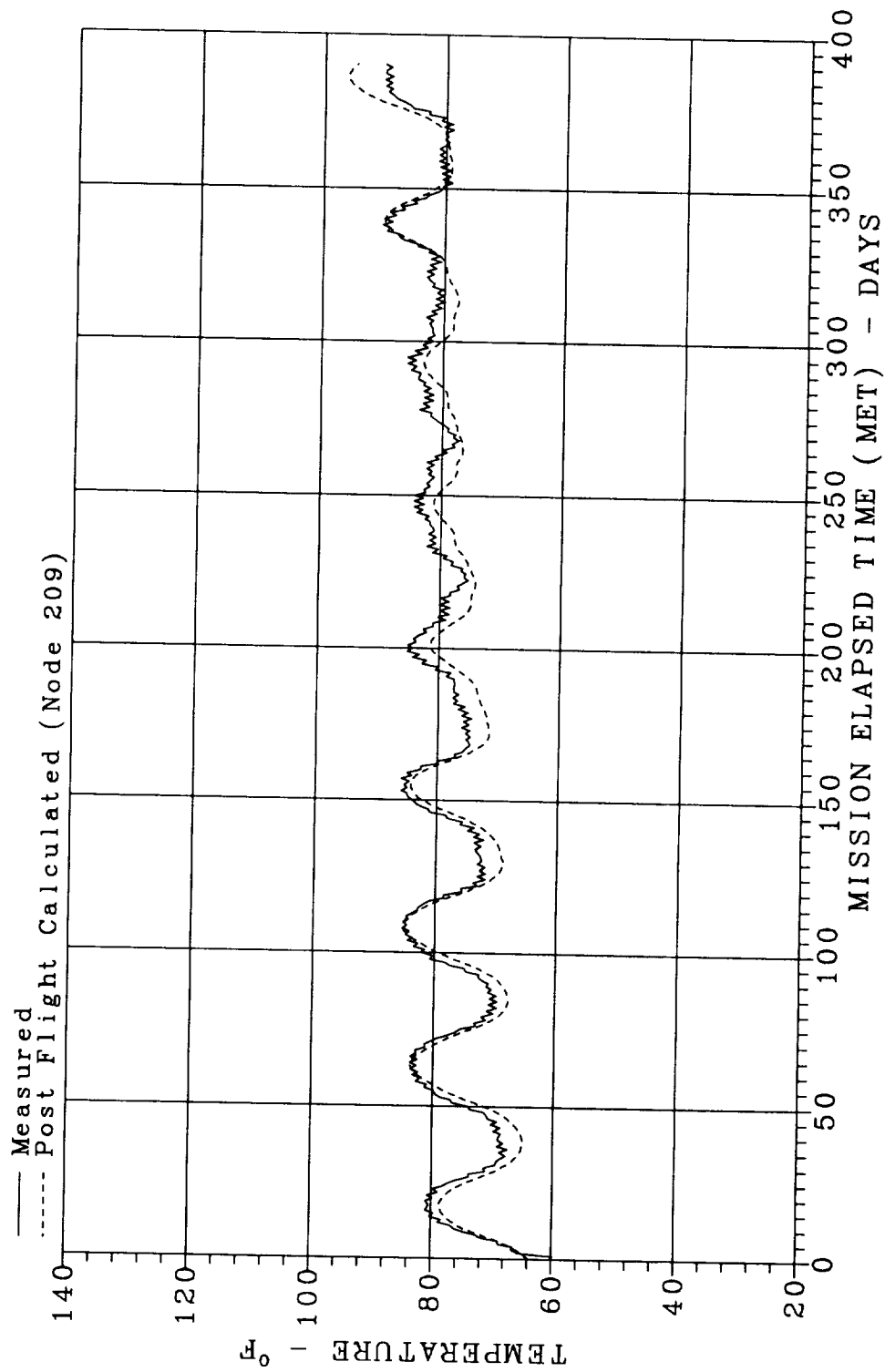


Figure 47 THERM Space End Data vs LDEF Post Flight Thermal Model.



## APPENDIX A

## ORBITAL INCIDENT HEAT FLUX

### > SOLAR, ALBEDO, & PLANET

**THERMAL FLUX @ 10° YAW (ALL ROWS/ENDS)**

## ONE ORBIT DETAILED

### -10° BETA ANGLE INTERVALS

**(-52°, -40°, -30°, -20°, -10°, 0°, 10°, 20°, 30°, 40°, 52°)**



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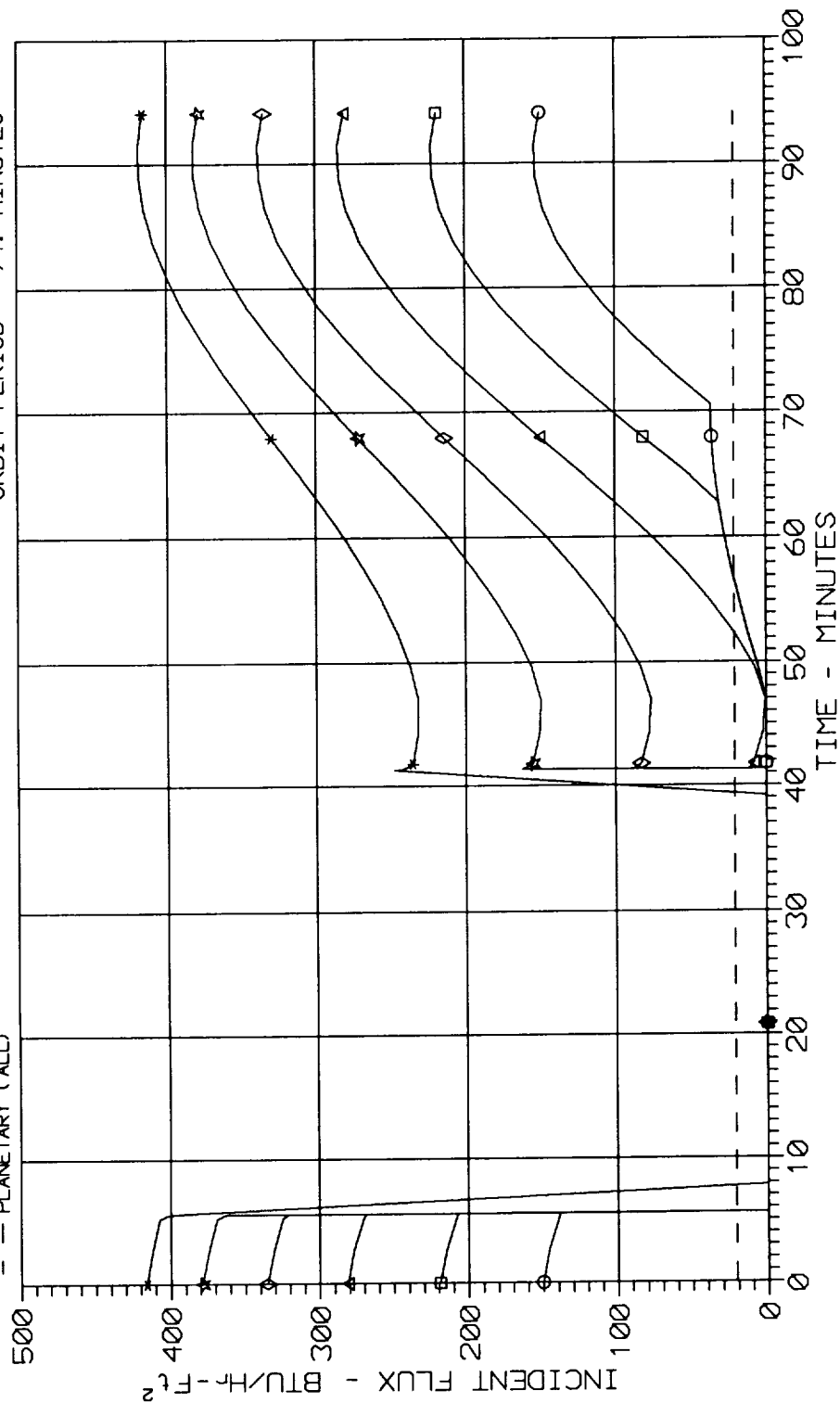
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

ROW: 1

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

00000 SOLAR + ALBEDO: 0°  
 00000 SOLAR + ALBEDO: 10°  
 00000 SOLAR + ALBEDO: 20°  
 00000 SOLAR + ALBEDO: 30°  
 00000 SOLAR + ALBEDO: 40°  
 00000 SOLAR + ALBEDO: 52°  
 - - - PLANETARY (ALL)



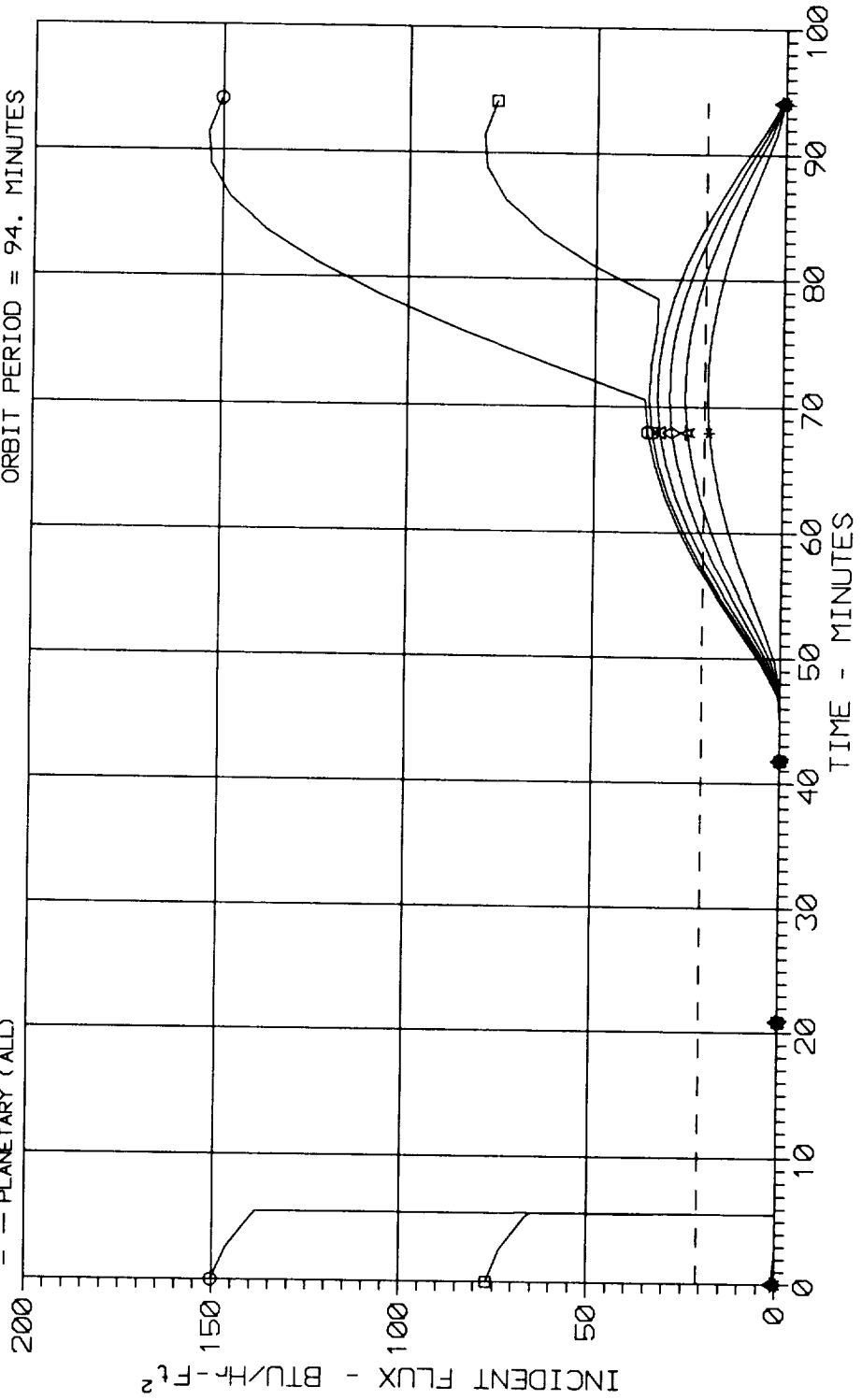
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

ROW: 1

SOLAR CONSTANT = 434  $Btu/Hr-Ft^2$   
 PLANETARY FLUX = 77  $Btu/Hr-Ft^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

00000 SOLAR + ALBEDO: 0°  
 00000 SOLAR + ALBEDO: -10°  
 00000 SOLAR + ALBEDO: -20°  
 00000 SOLAR + ALBEDO: -30°  
 00000 SOLAR + ALBEDO: -40°  
 00000 SOLAR + ALBEDO: -52°  
 --- PLANETARY (ALL)

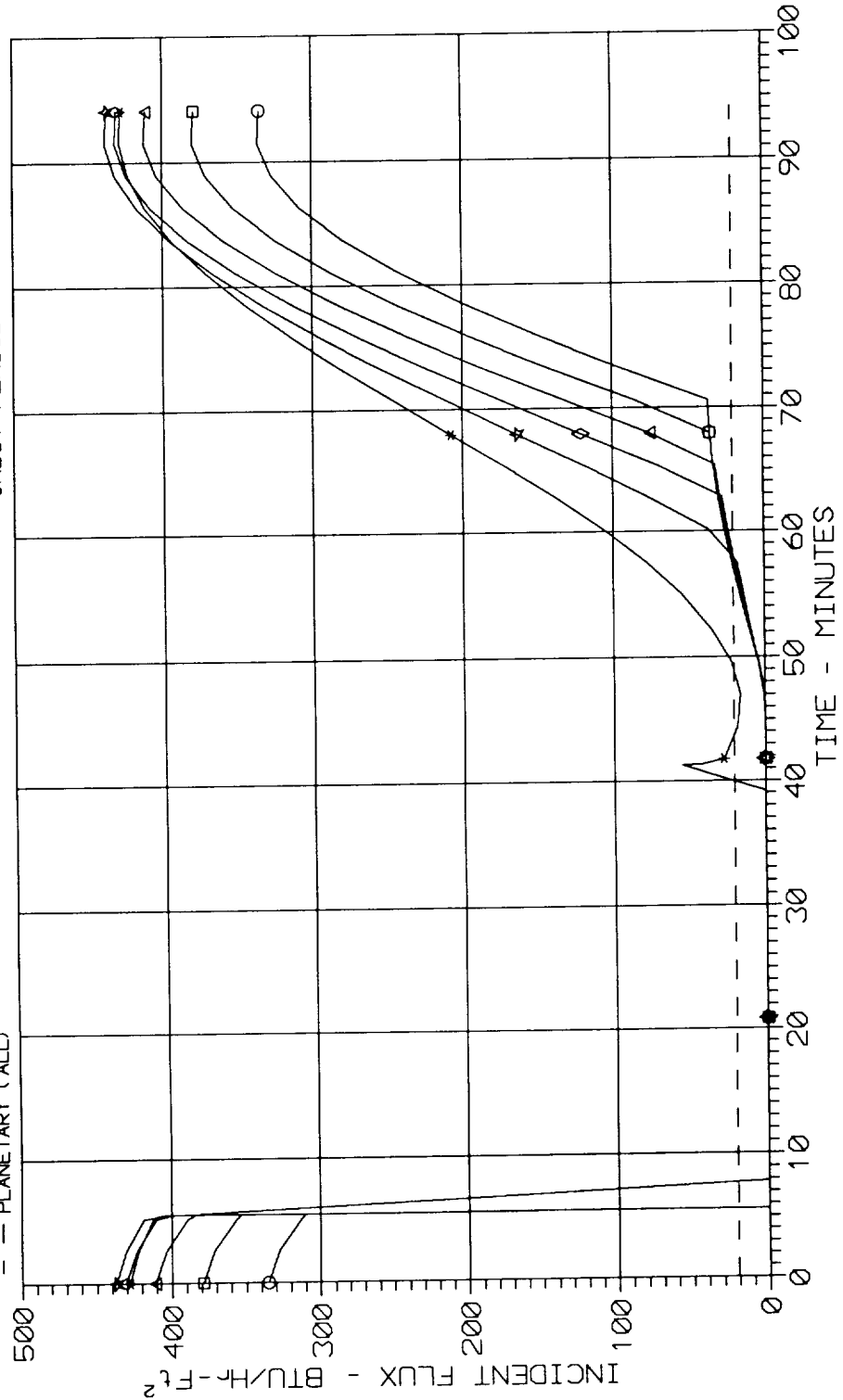


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

ROW: 2  
 SOLAR CONSTANT = 434  $\text{BTU}/\text{Hr} - \text{Ft}^2$   
 PLANETARY FLUX = 77  $\text{BTU}/\text{Hr} - \text{Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

OOOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: 10°  
 AAAAA SOLAR + ALBEDO: 20°  
 VVVVV SOLAR + ALBEDO: 30°  
 ^^^^^ SOLAR + ALBEDO: 40°  
 \*\*\*\*\* SOLAR + ALBEDO: 52°  
 - - - PLANETARY (ALL)



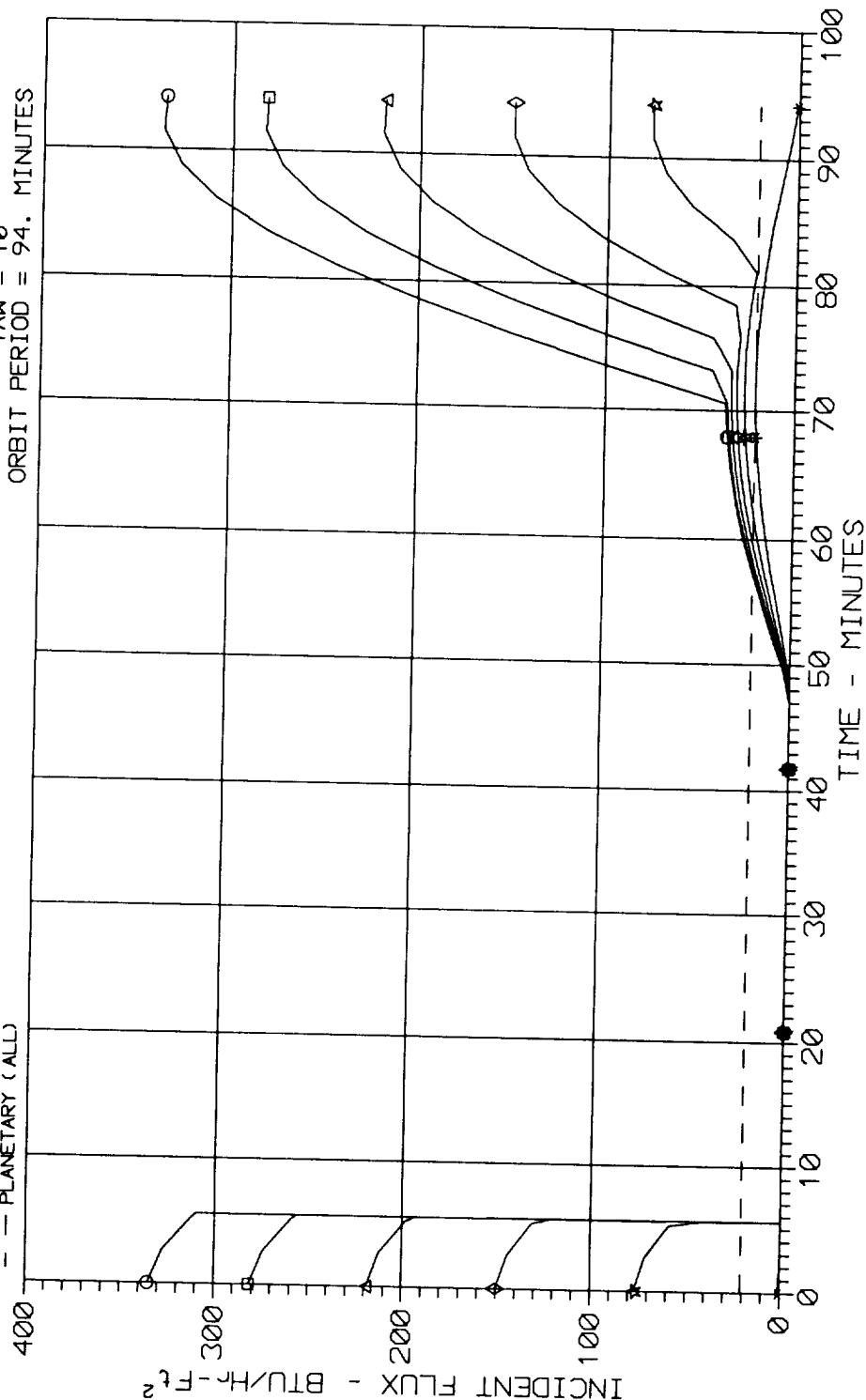
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

ROW: 2

OOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: -10°  
 AAAAA SOLAR + ALBEDO: -20°  
 OOOO SOLAR + ALBEDO: -30°  
 AAAAA SOLAR + ALBEDO: -40°  
 \*\*\*\*\* SOLAR + ALBEDO: -52°  
 - - - PLANETARY (ALL)

SOLAR CONSTANT = 434  $\text{Btu/Hr-Ft}^2$   
 PLANETARY FLUX = 77  $\text{Btu/Hr-Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES



# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

ROW: 3

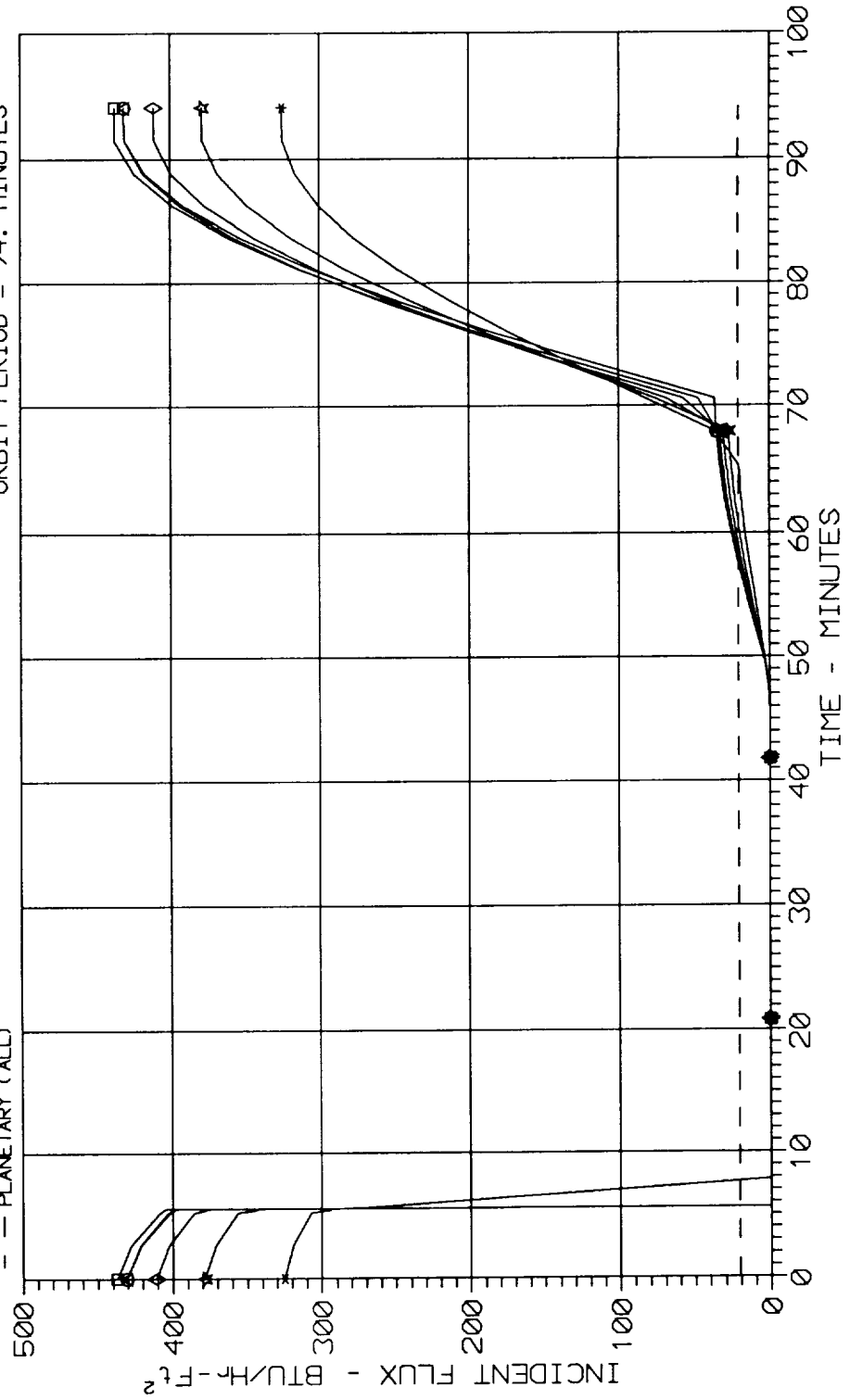
SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>

ALBEDO = 31%  
 ALTITUDE = 255 NM

YAW = 10°

ORBIT PERIOD = 94. MINUTES

00000 SOLAR + ALBEDO: 0°  
 00000 SOLAR + ALBEDO: 10°  
 00000 SOLAR + ALBEDO: 20°  
 00000 SOLAR + ALBEDO: 30°  
 00000 SOLAR + ALBEDO: 40°  
 00000 SOLAR + ALBEDO: 52°  
 - - PLANETARY (ALL)

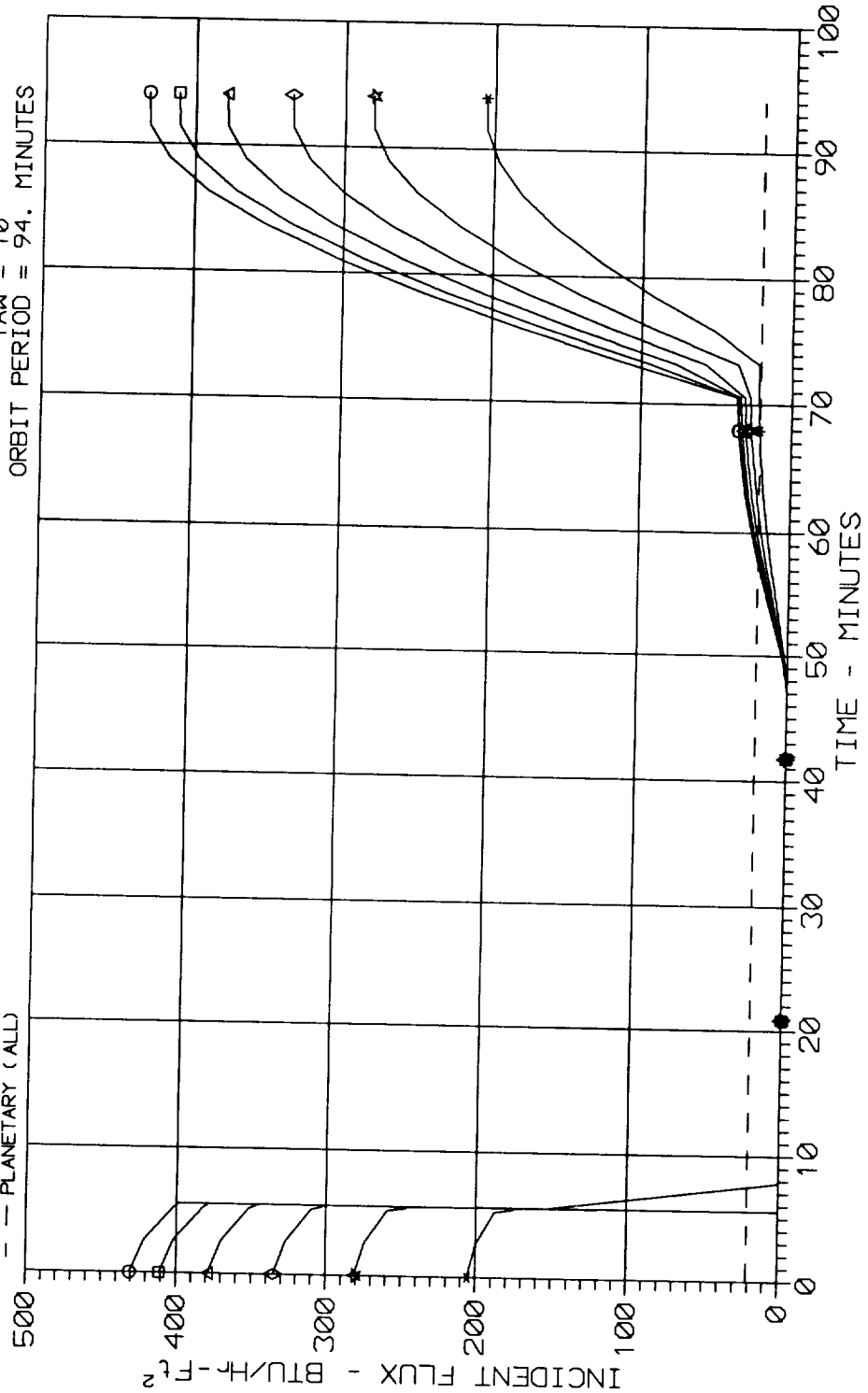


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

ROW: 3

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES





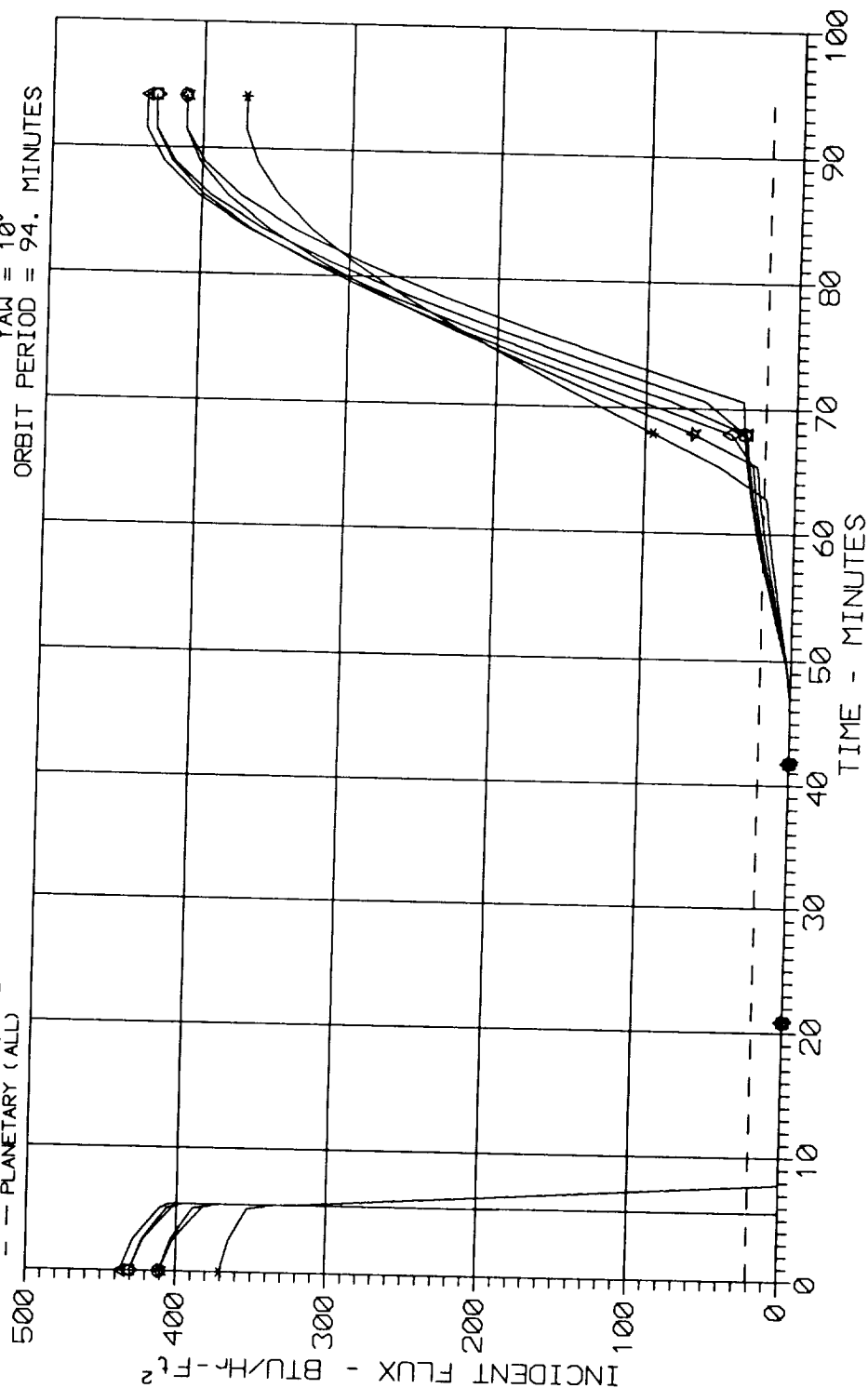
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

ROW: 4

○○○○○ SOLAR+ALBEDO: -0°  
 □□□□□ SOLAR+ALBEDO: -10°  
 △△△△△ SOLAR+ALBEDO: -20°  
 ◇◇◇◇◇ SOLAR+ALBEDO: -30°  
 ★★ ★★ SOLAR+ALBEDO: -40°  
 \*\*\*\*\* SOLAR+ALBEDO: -52°  
 - - - PLANETARY (ALL)

SOLAR CONSTANT = 434 BTU/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

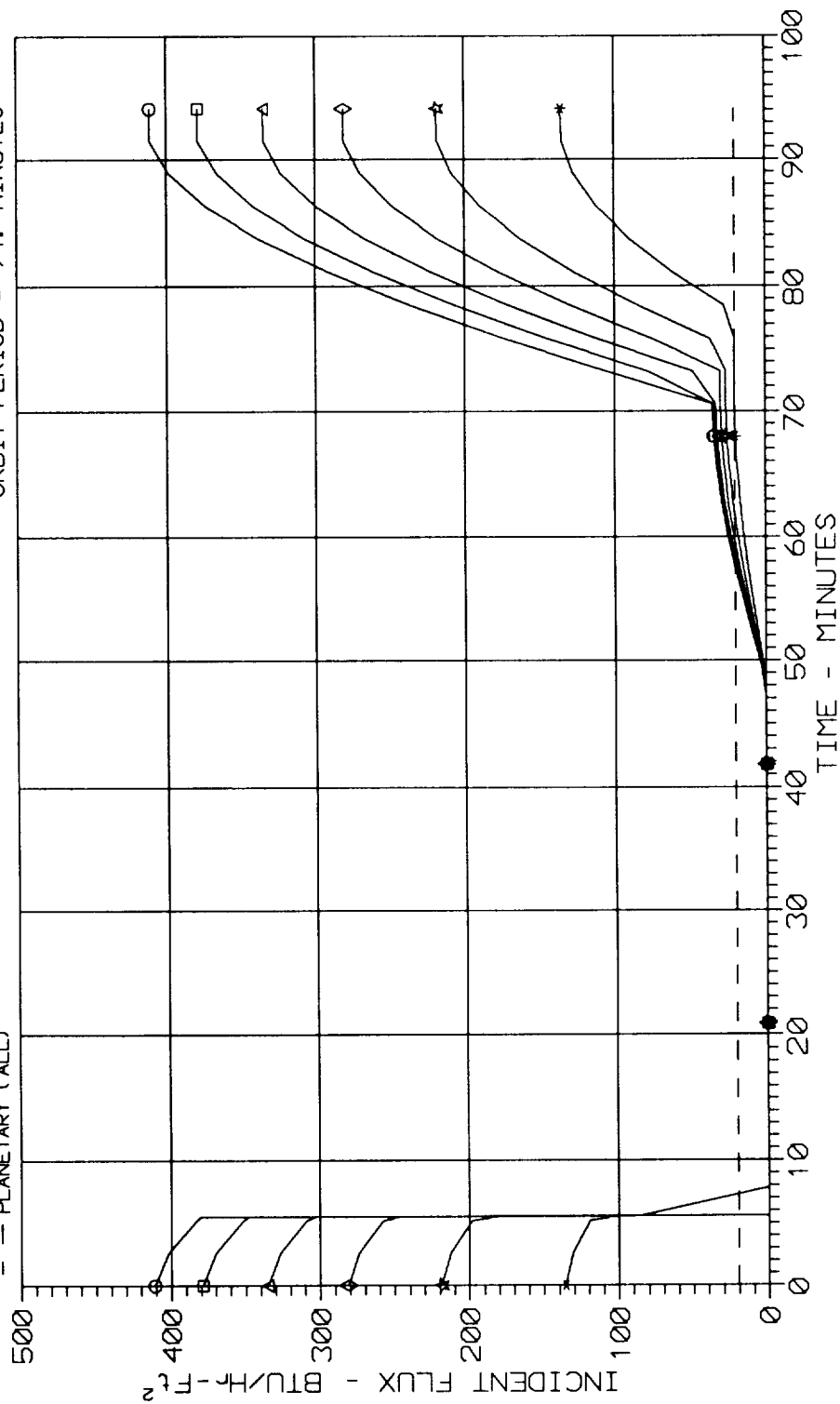


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

ROW: 4  
 SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

00000 SOLAR + ALBEDO: 0°  
 00000 SOLAR + ALBEDO: 10°  
 00000 SOLAR + ALBEDO: 20°  
 00000 SOLAR + ALBEDO: 30°  
 00000 SOLAR + ALBEDO: 40°  
 00000 SOLAR + ALBEDO: 52°  
 --- PLANETARY (ALL)

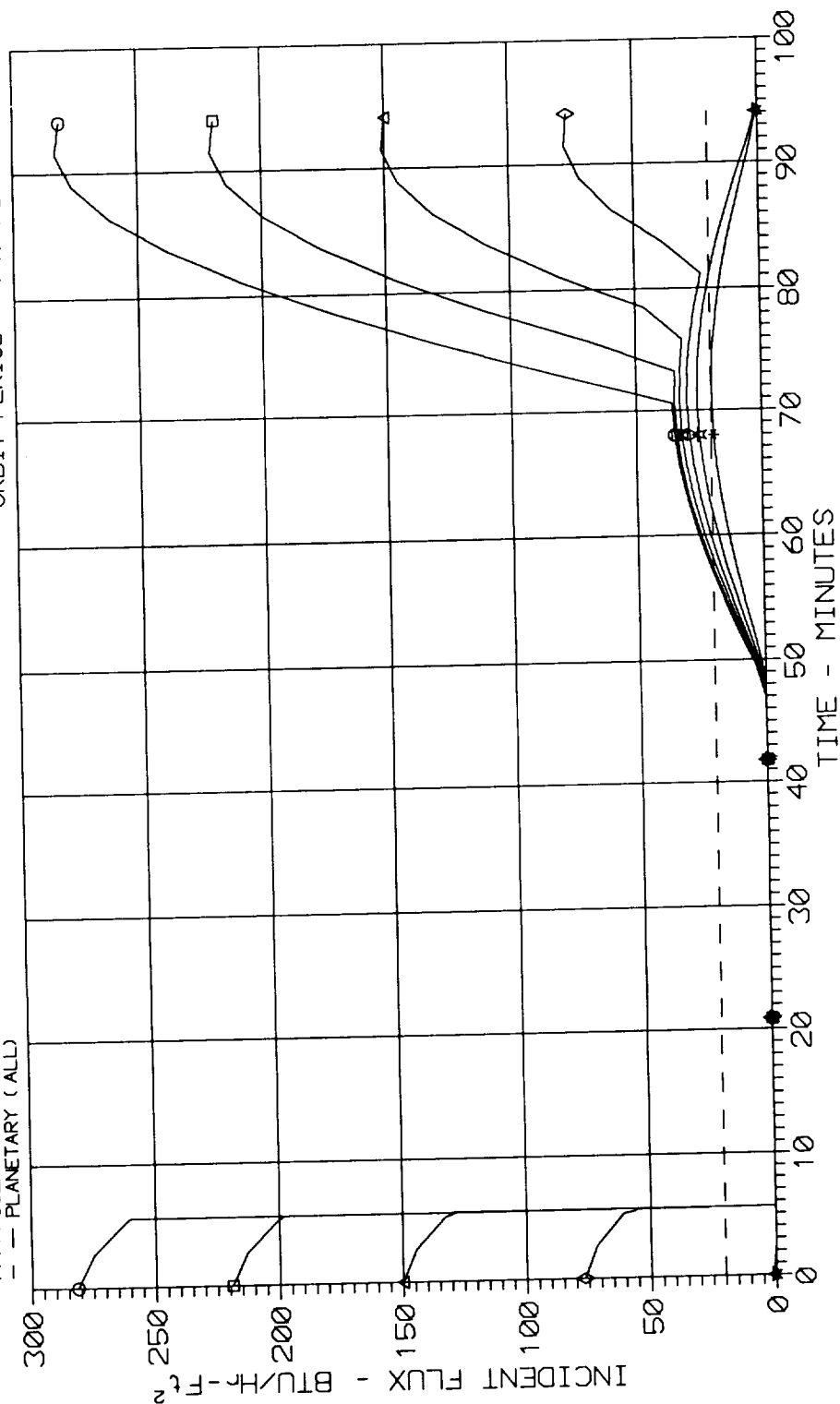


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

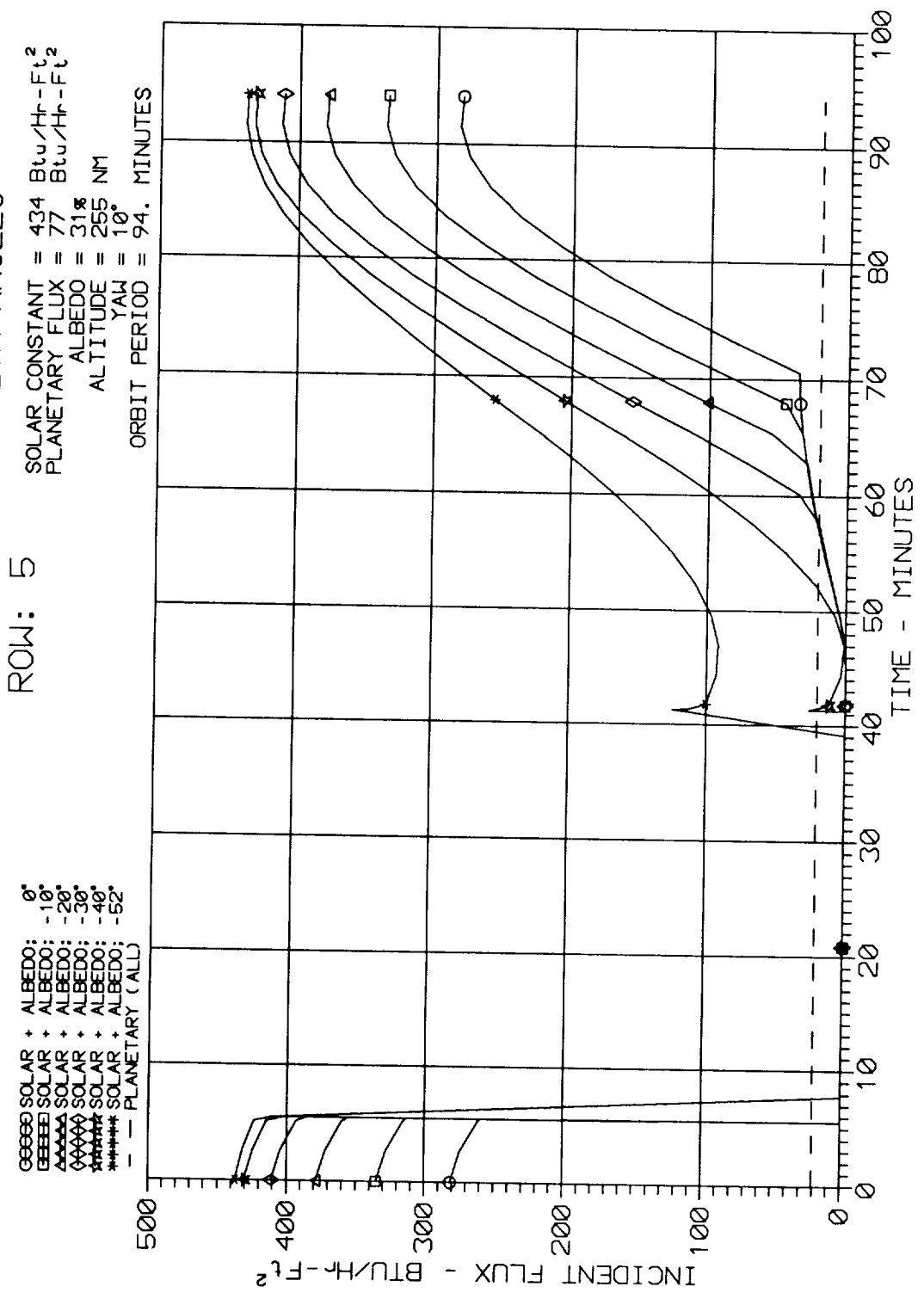
ROW: 5  
 SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

00000 SOLAR + ALBEDO: 0°  
 00000 SOLAR + ALBEDO: 10°  
 00000 SOLAR + ALBEDO: 20°  
 00000 SOLAR + ALBEDO: 30°  
 00000 SOLAR + ALBEDO: 40°  
 00000 SOLAR + ALBEDO: 52°  
 --- PLANETARY (ALL)



# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES



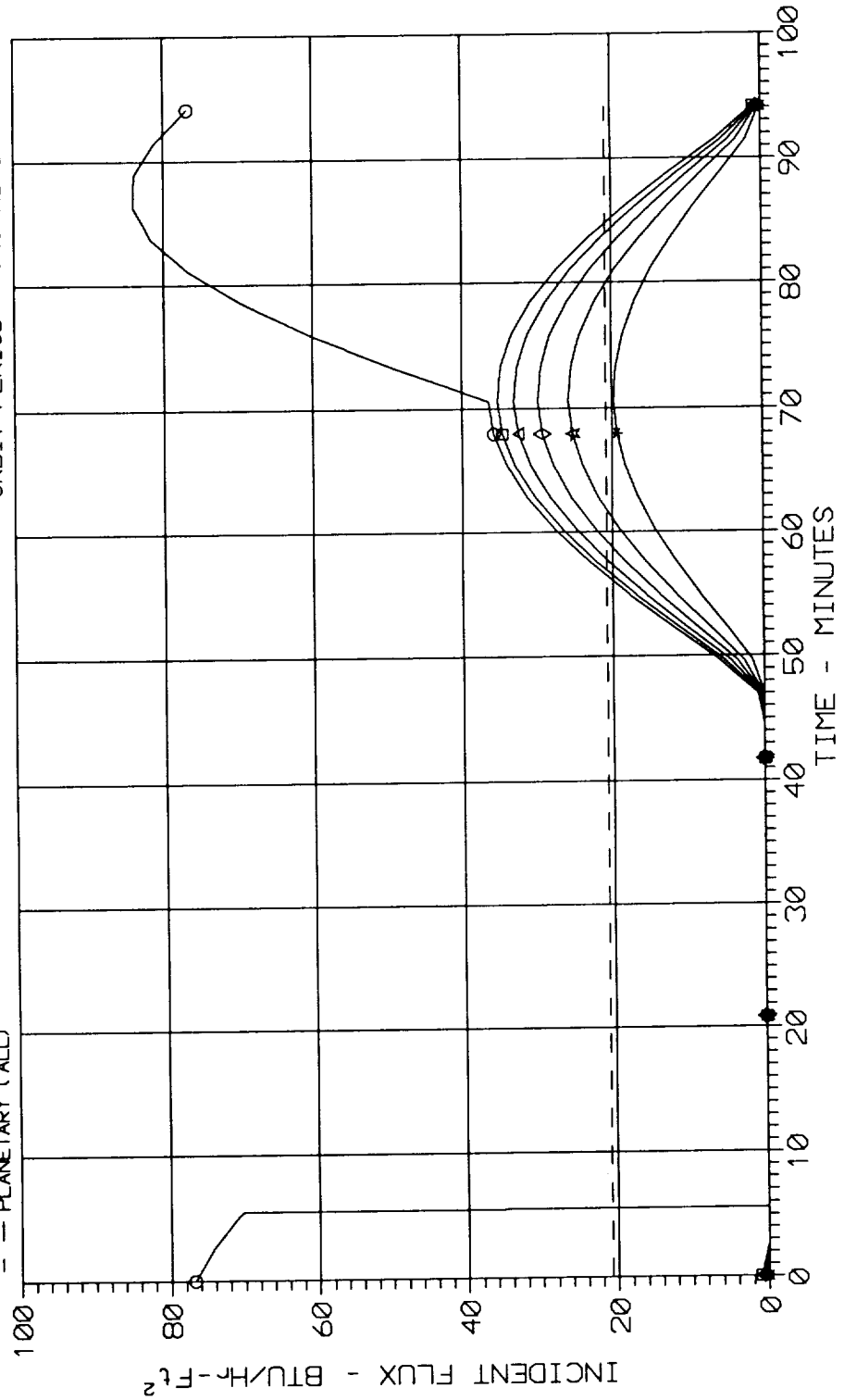
# LONG DURATION EXPOSURE FACILITY

ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

ROW: 6

SOLAR CONSTANT = 434  $\text{Btu/Hr-Ft}^2$   
 PLANETARY FLUX = 77  $\text{Btu/Hr-Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

OOOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: 10°  
 AAAAA SOLAR + ALBEDO: 20°  
 OOOOO SOLAR + ALBEDO: 30°  
 \*\*\*\*\* SOLAR + ALBEDO: 40°  
 \*\*\*\*\* SOLAR + ALBEDO: 52°  
 - - - PLANETARY (ALL)



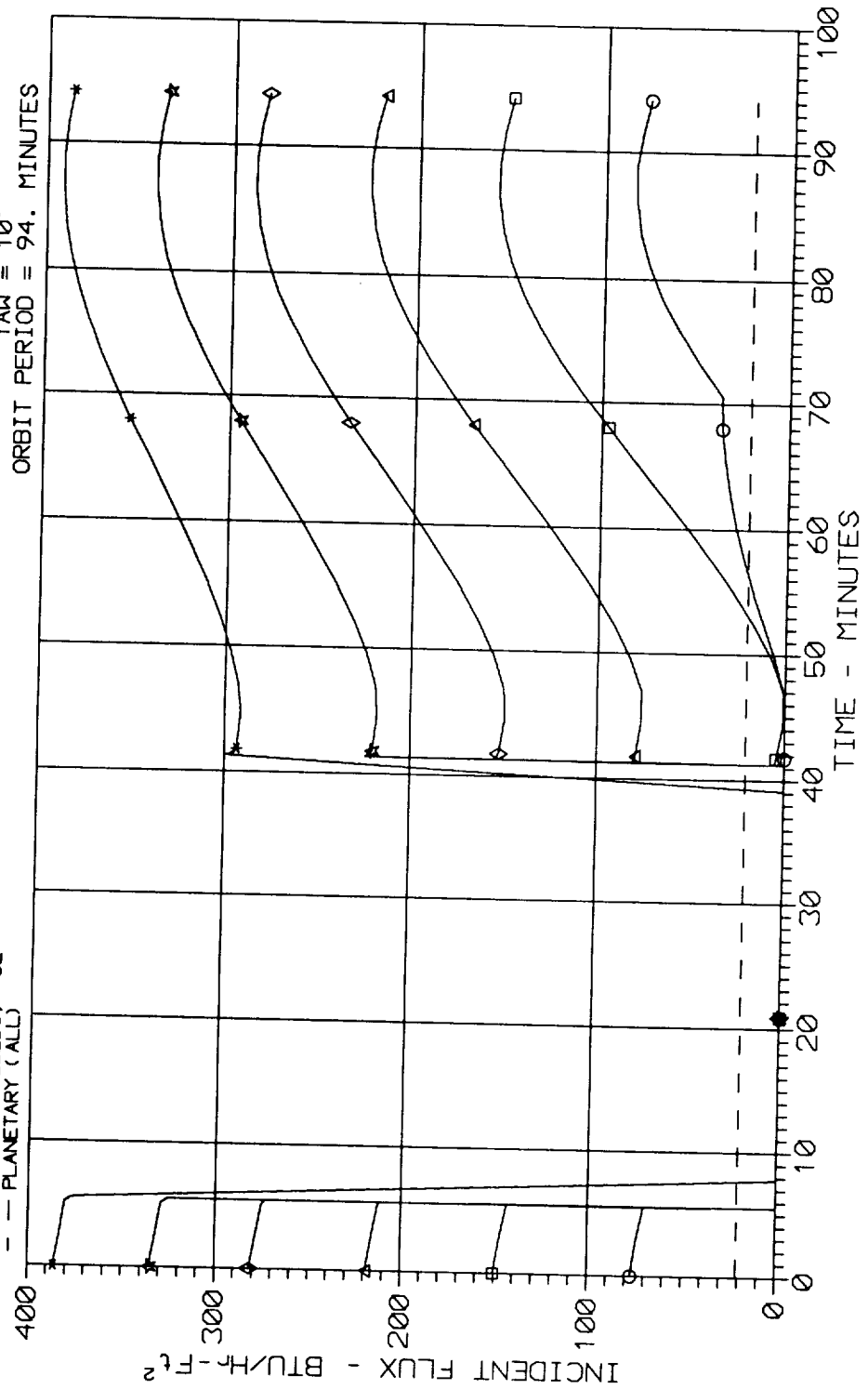
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

OOOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: -10°  
 AAAAA SOLAR + ALBEDO: -20°  
 OOOOO SOLAR + ALBEDO: -30°  
 AAAAA SOLAR + ALBEDO: -40°  
 \*\*\*\*\* SOLAR + ALBEDO: -52°  
 — — PLANETARY (ALL)

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

ROW: 6



# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

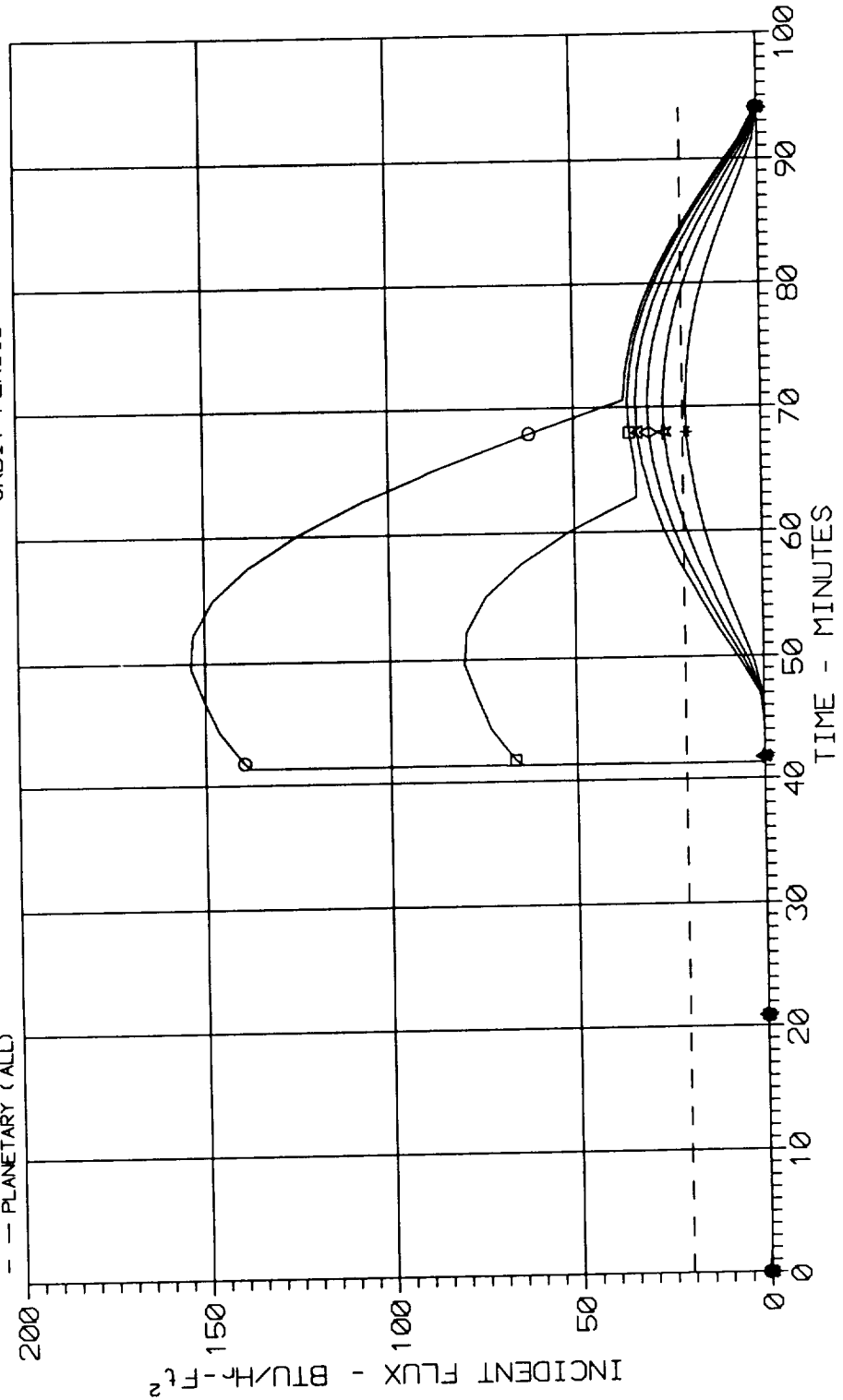
ROW: 7

SOLAR CONSTANT = 434  $\text{Btu/Hr-Ft}^2$   
 PLANETARY FLUX = 77  $\text{Btu/Hr-Ft}^2$

ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

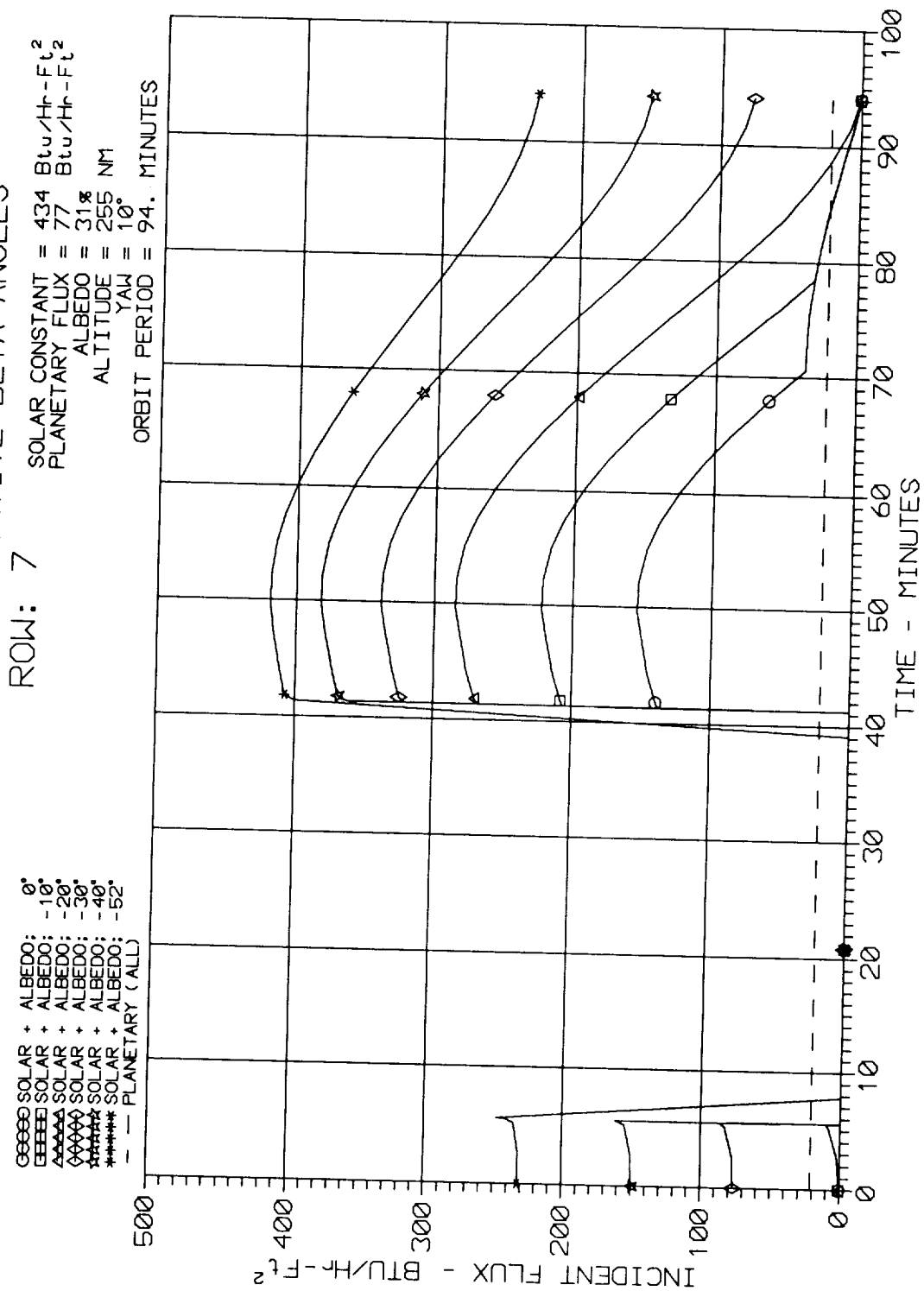
ORBIT PERIOD = 94. MINUTES

OOOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: 10°  
 AAAAA SOLAR + ALBEDO: 20°  
 VVVVV SOLAR + ALBEDO: 30°  
 ^^^^^ SOLAR + ALBEDO: 40°  
 \*\*\*\*\* SOLAR + ALBEDO: 52°  
 — — PLANETARY (ALL)



# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES



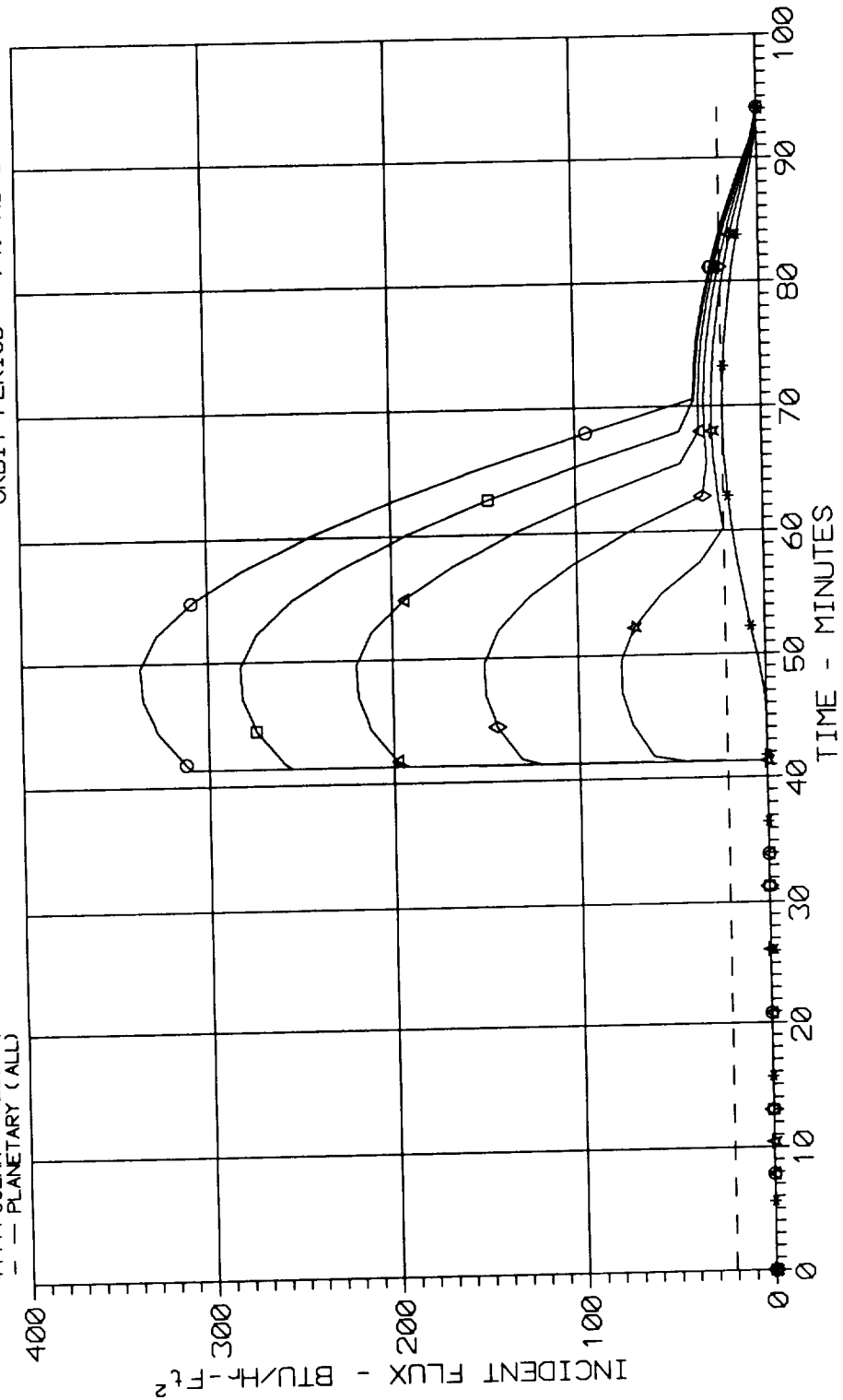


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

ROW: 8  
 SOLAR CONSTANT = 434  $\text{Btu/Hr-Ft}^2$   
 PLANETARY FLUX = 77  $\text{Btu/Hr-Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

OOOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: 10°  
 AAAAA SOLAR + ALBEDO: 20°  
 VVVVV SOLAR + ALBEDO: 30°  
 ^^^^^ SOLAR + ALBEDO: 40°  
 \*\*\*\*\* SOLAR + ALBEDO: 52°  
 --- PLANETARY (ALL)



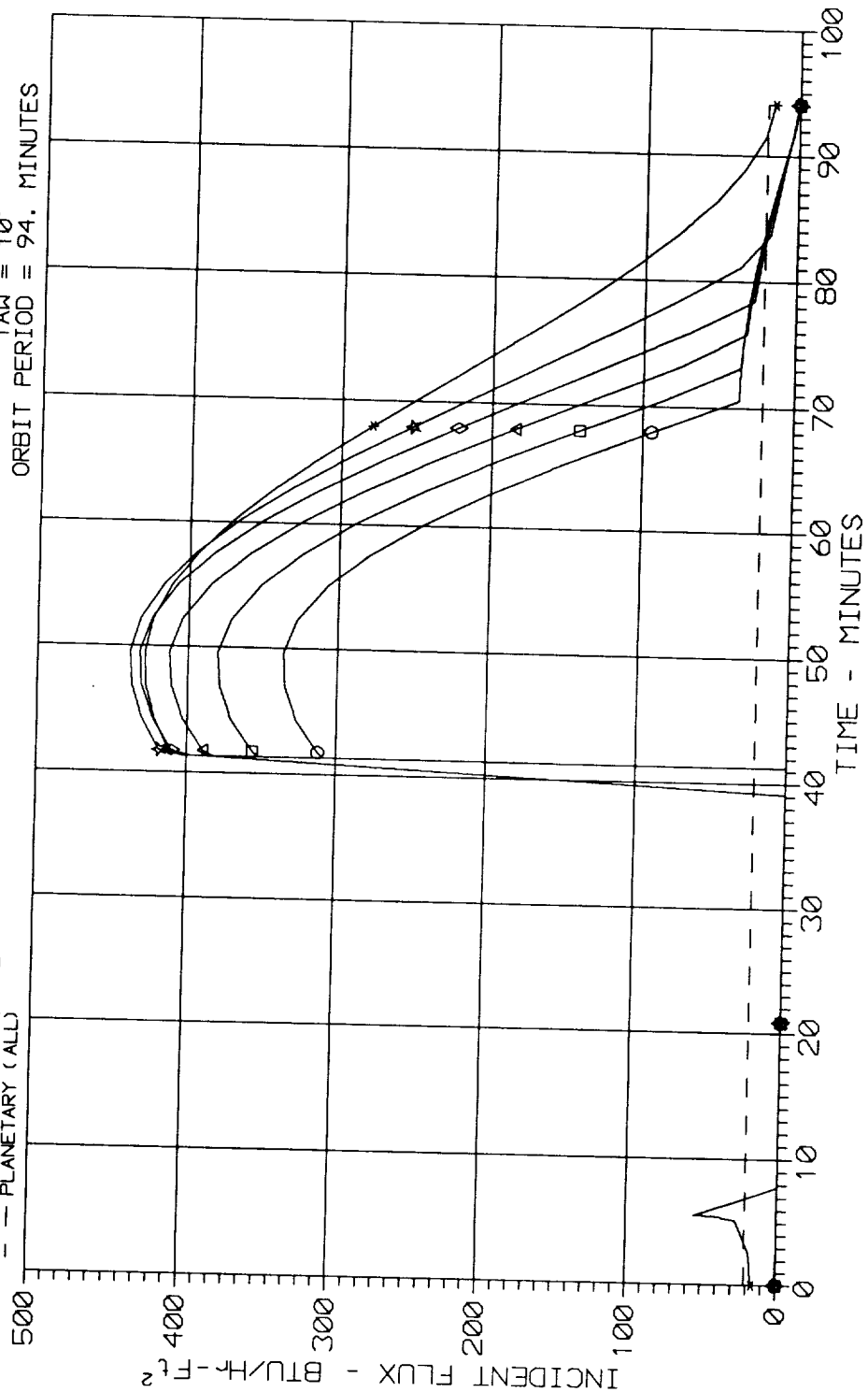
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

ROW: 8

SOLAR CONSTANT = 434  $\text{Btu/Hr-Ft}^2$   
 PLANETARY FLUX = 77  $\text{Btu/Hr-Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

○○○○ SOLAR + ALBEDO: 0°  
 ○○○○ SOLAR + ALBEDO: -10°  
 ○○○○ SOLAR + ALBEDO: -20°  
 ○○○○ SOLAR + ALBEDO: -30°  
 ○○○○ SOLAR + ALBEDO: -40°  
 ○○○○ SOLAR + ALBEDO: -52°  
 — — — PLANETARY (ALL)

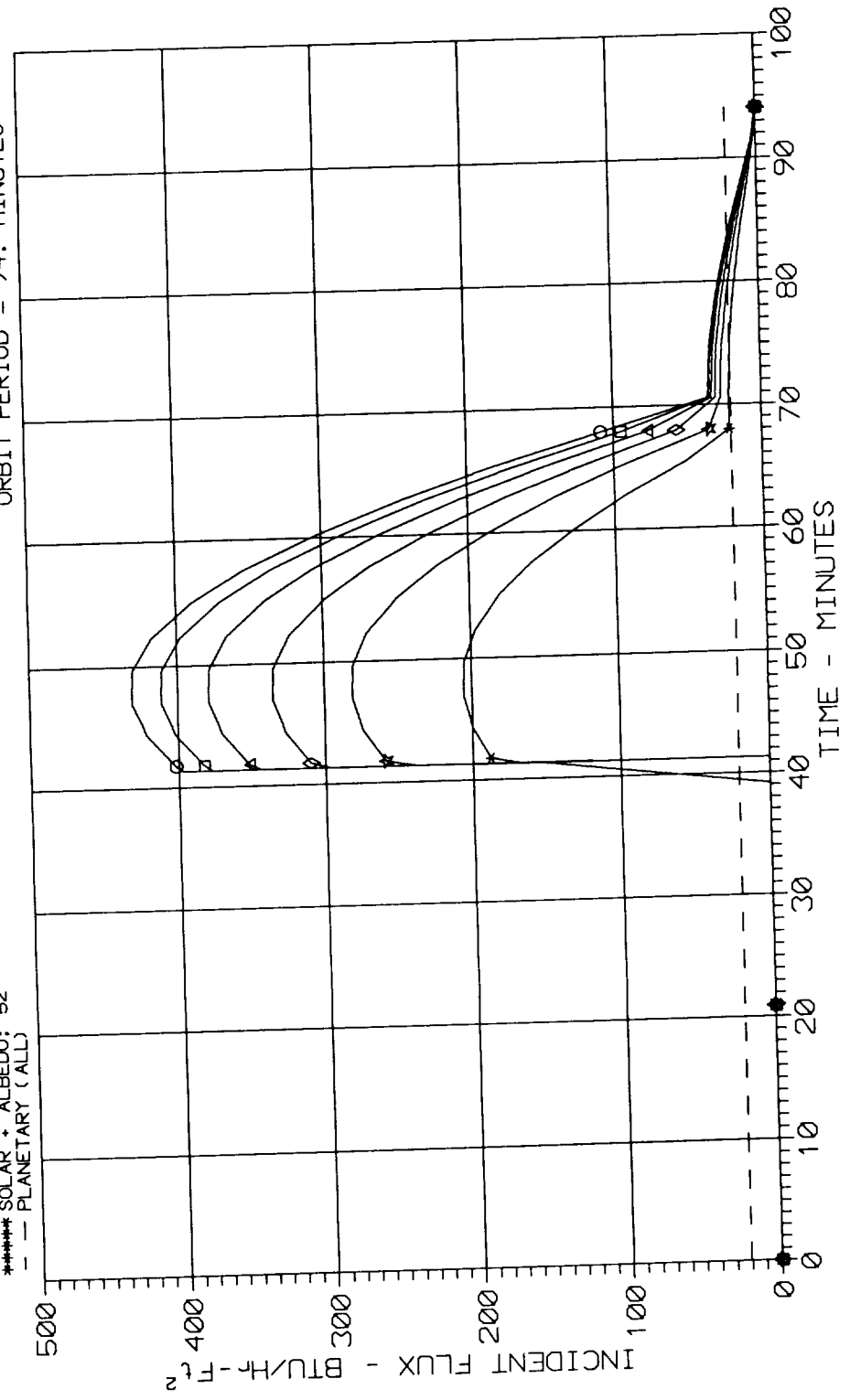


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

ROW: 9  
 SOLAR CONSTANT = 434  $\text{BTU}/\text{Hr} \cdot \text{Ft}^2$   
 PLANETARY FLUX = 77  $\text{BTU}/\text{Hr} \cdot \text{Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

○○○○ SOLAR + ALBEDO: 0°  
 ○○○○ SOLAR + ALBEDO: 10°  
 ○○○○ SOLAR + ALBEDO: 20°  
 ○○○○ SOLAR + ALBEDO: 30°  
 ○○○○ SOLAR + ALBEDO: 40°  
 ○○○○ SOLAR + ALBEDO: 52°  
 — PLANETARY (ALL)



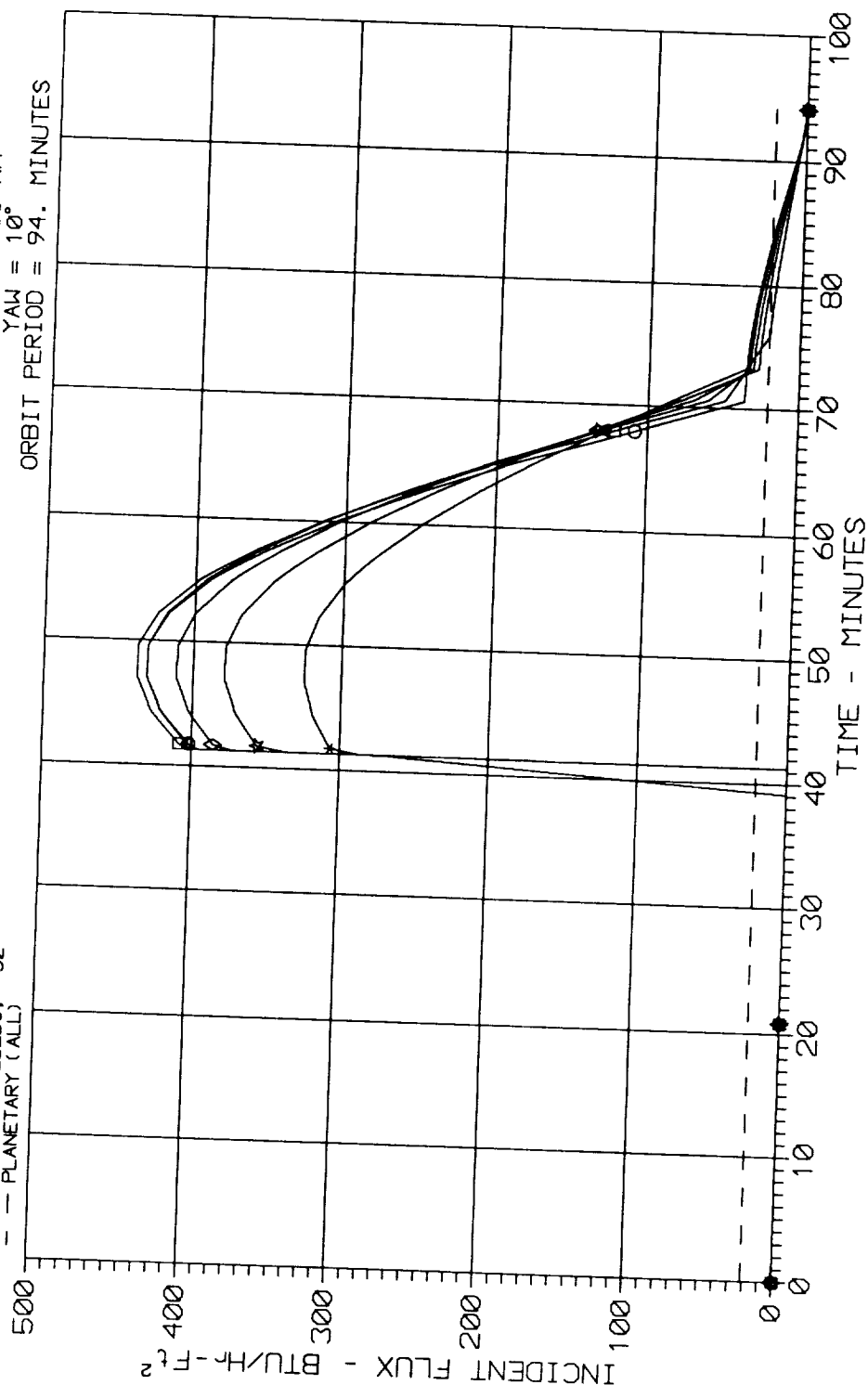
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

### ROW: 9

○○○○○ SOLAR + ALBEDO: 0°  
 ○○○○○ SOLAR + ALBEDO: -10°  
 ○○○○○ SOLAR + ALBEDO: -20°  
 ○○○○○ SOLAR + ALBEDO: -30°  
 ○○○○○ SOLAR + ALBEDO: -40°  
 ○○○○○ SOLAR + ALBEDO: -52°  
 — — — PLANETARY (ALL)

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

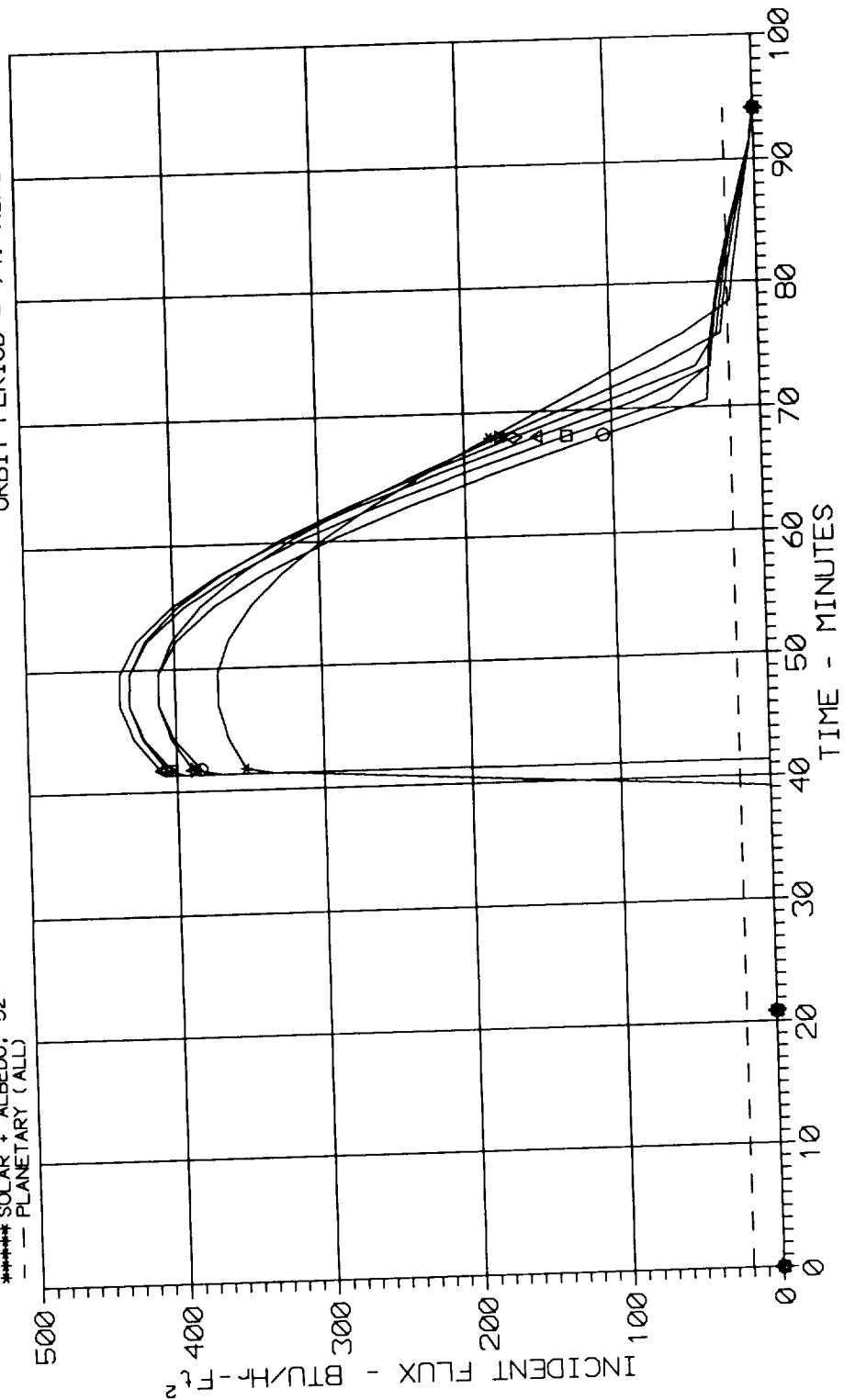


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

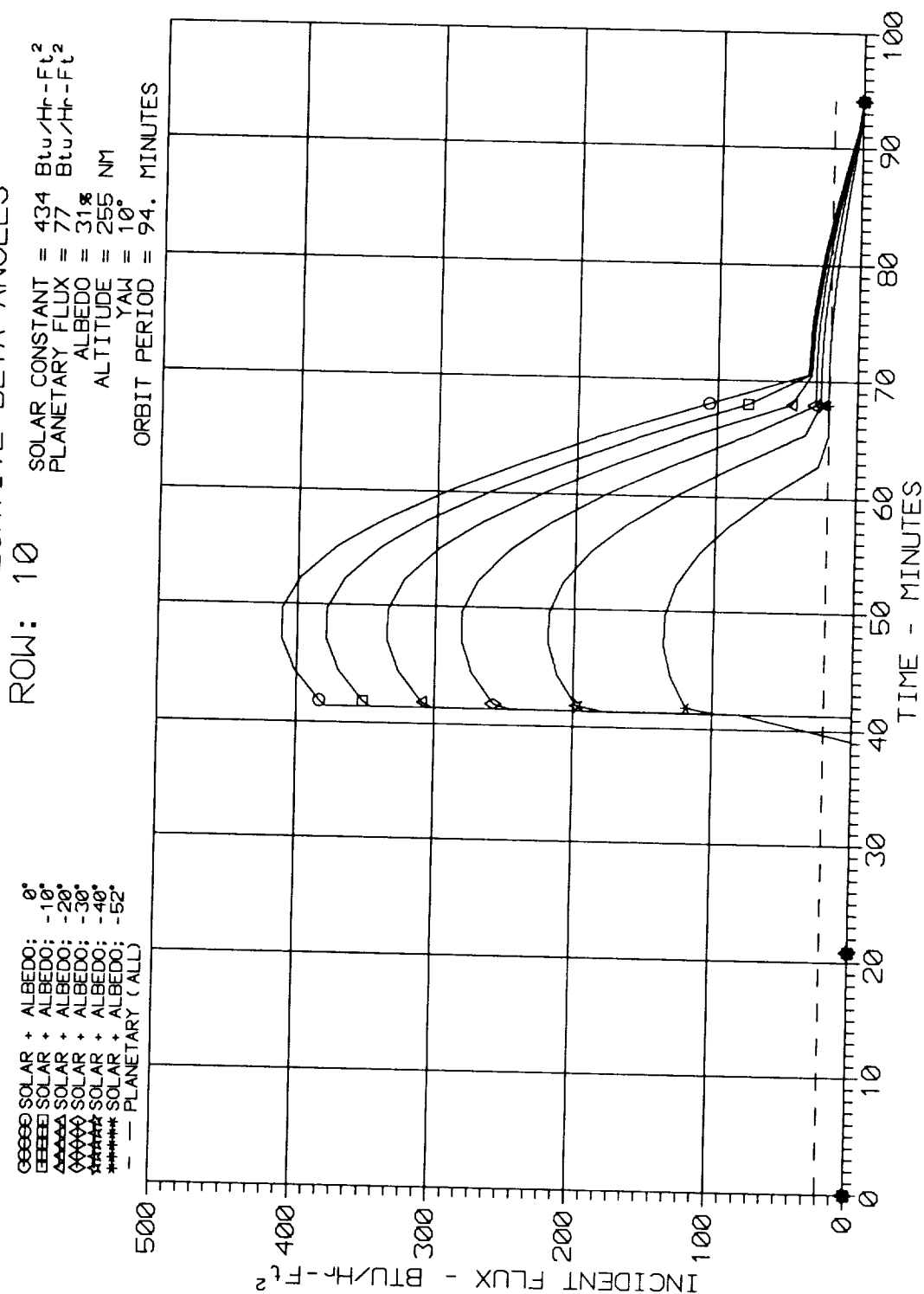
ROW: 10  
 SOLAR CONSTANT = 434 Btu/Hr- $F_t^2$   
 PLANETARY FLUX = 77 Btu/Hr- $F_t^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

00000 SOLAR + ALBEDO: 0°  
 00000 SOLAR + ALBEDO: 10°  
 00000 SOLAR + ALBEDO: 20°  
 00000 SOLAR + ALBEDO: 30°  
 00000 SOLAR + ALBEDO: 40°  
 00000 SOLAR + ALBEDO: 52°  
 \*\*\*\*\* SOLAR + ALBEDO: 52°  
 --- PLANETARY (ALL)



# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

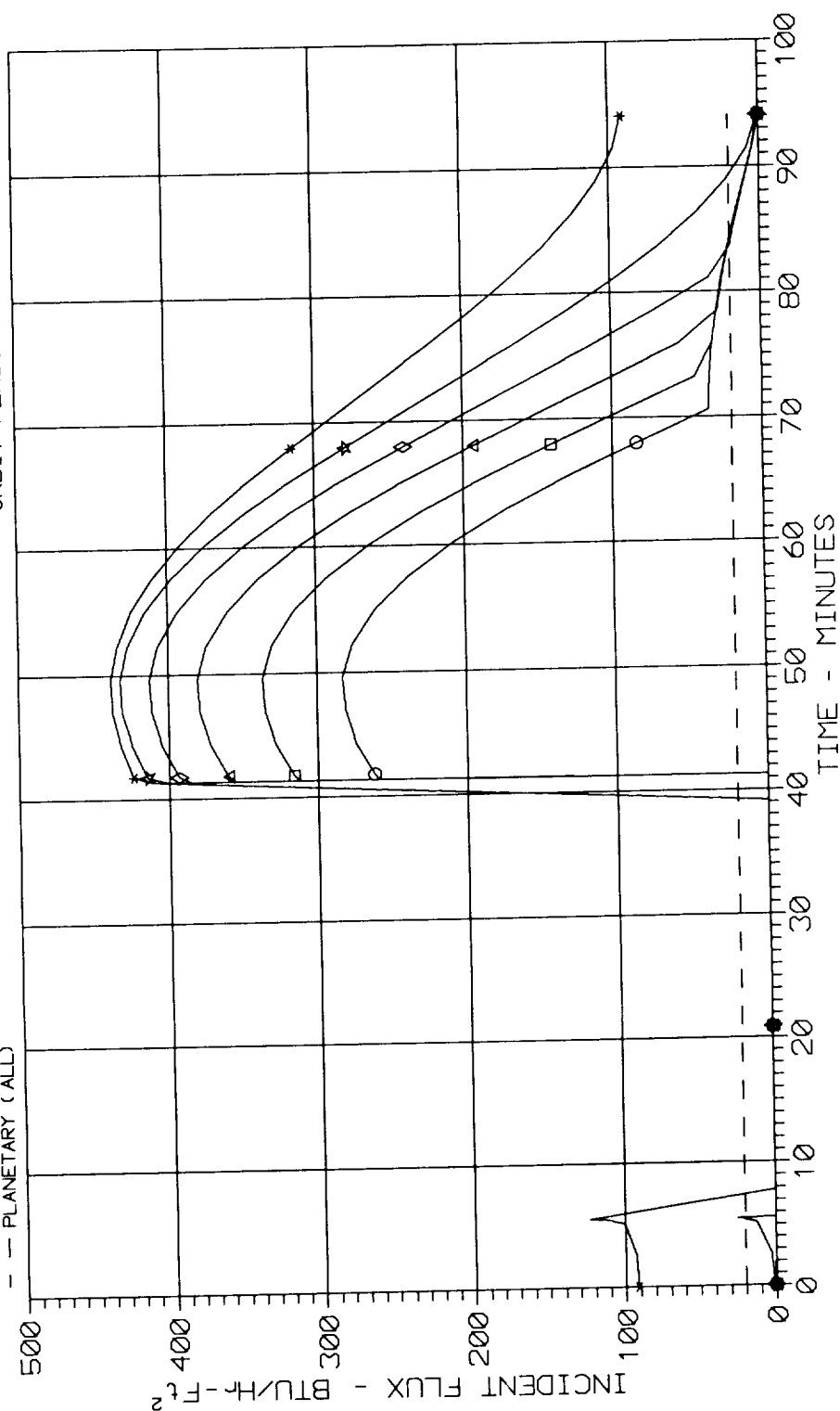


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

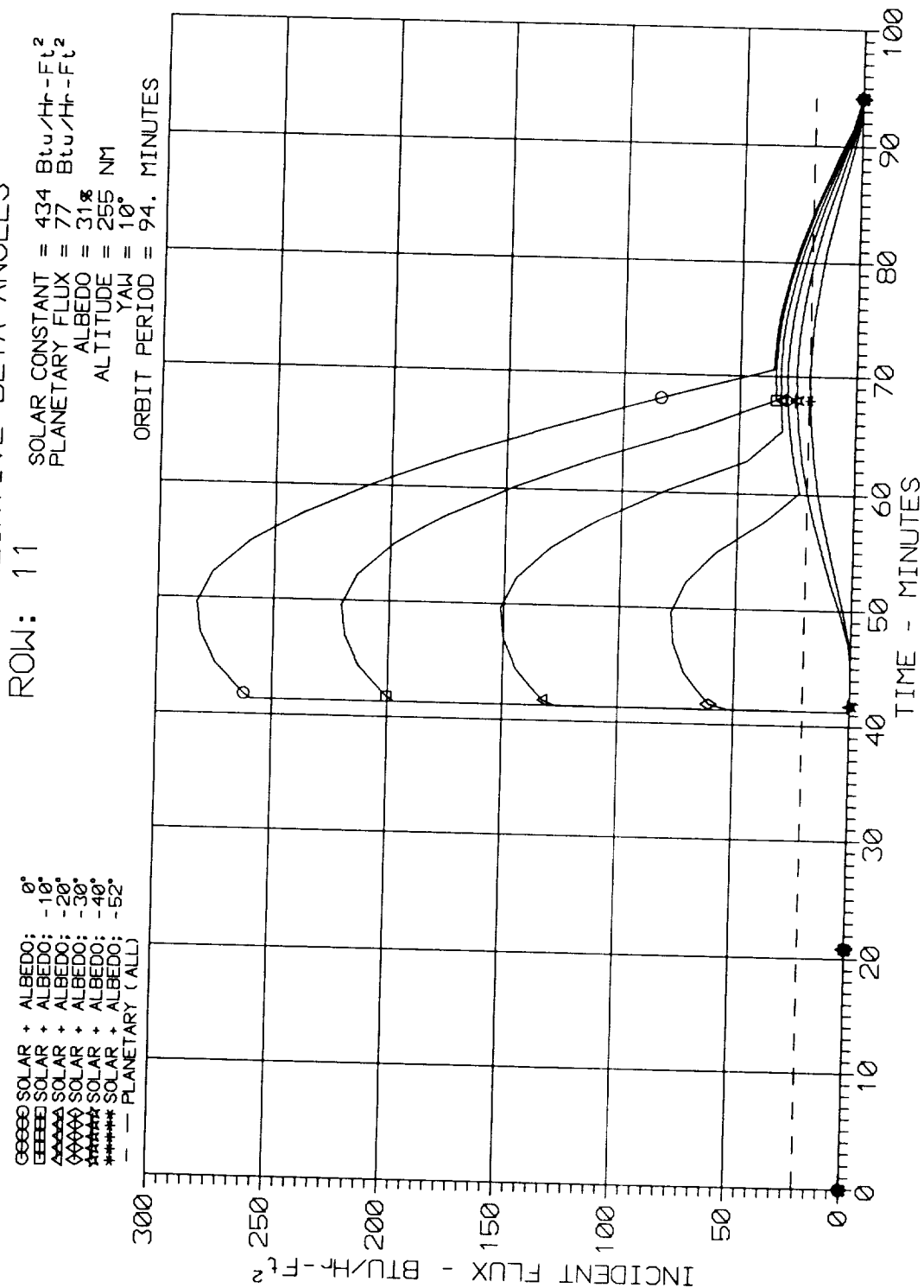
ROW: 11  
 SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

OOOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: 10°  
 AAAAA SOLAR + ALBEDO: 20°  
 OOOOO SOLAR + ALBEDO: 30°  
 \*\*\*\*\* SOLAR + ALBEDO: 40°  
 \*\*\*\*\* SOLAR + ALBEDO: 52°  
 - - - PLANETARY (ALL)



# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES



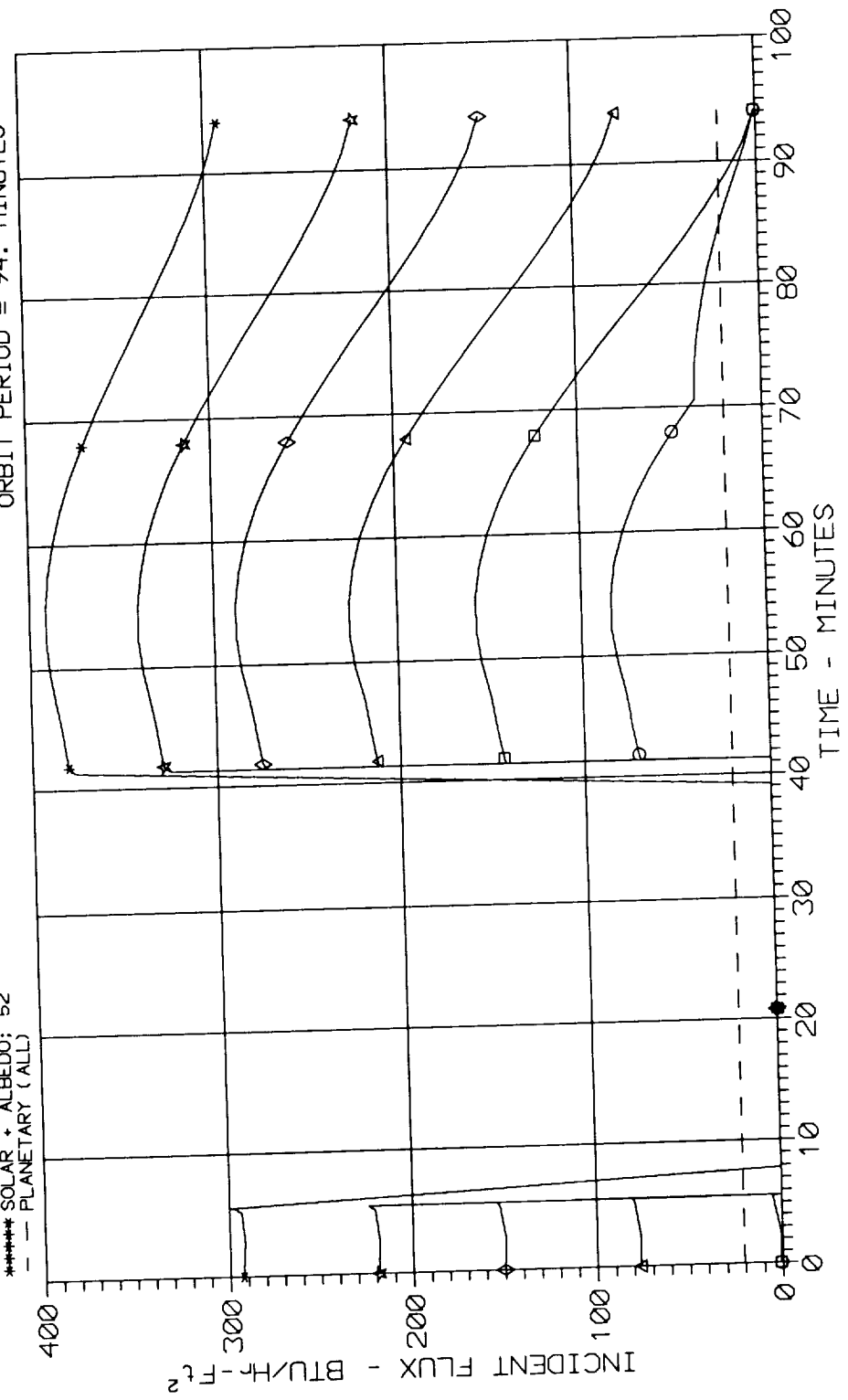


# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

ROW: 12  
 SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

0°  
 18°  
 20°  
 30°  
 40°  
 52°  
 — PLANETARY (ALL)



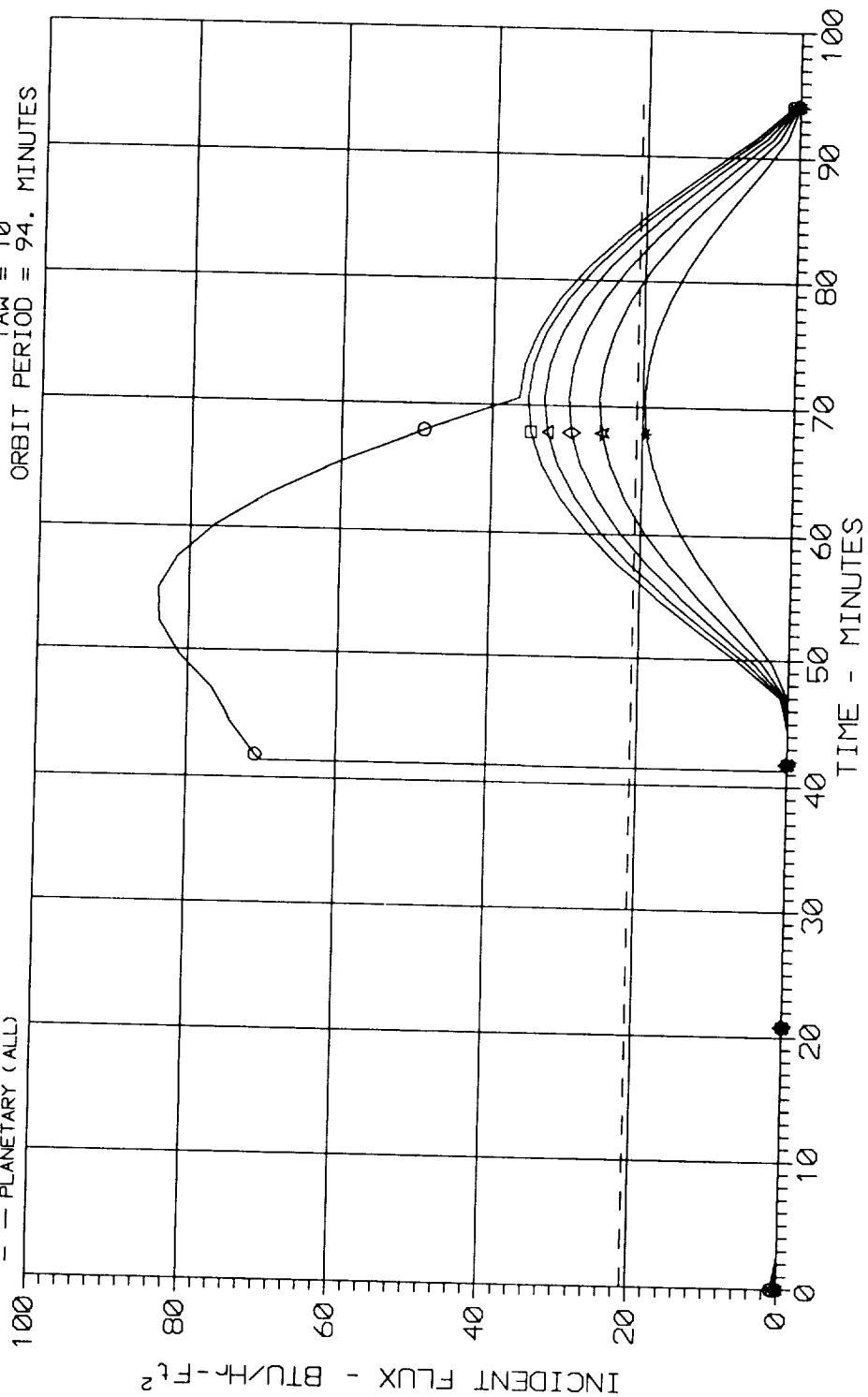
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

ROW: 12

SOLAR CONSTANT = 434  $\text{BTU}/\text{Hr} - \text{Ft}^2$   
 PLANETARY FLUX = 77  $\text{BTU}/\text{Hr} - \text{Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

----- SOLAR \* ALBEDO: 0°  
 ----- SOLAR \* ALBEDO: -10°  
 ----- SOLAR \* ALBEDO: -20°  
 ----- SOLAR \* ALBEDO: -30°  
 ----- SOLAR \* ALBEDO: -40°  
 ----- SOLAR \* ALBEDO: -52°  
 --- PLANETARY (ALL)



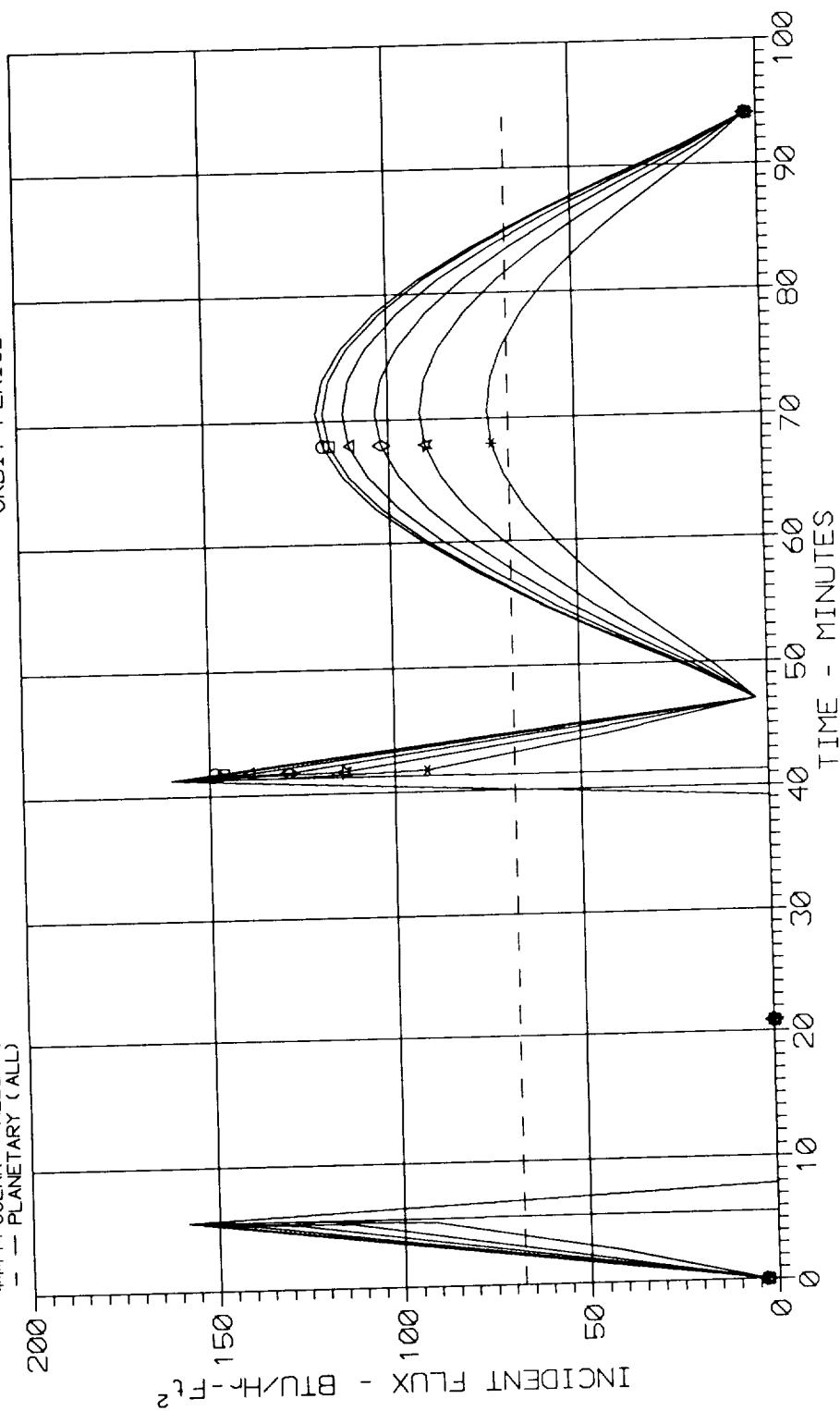
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

### EARTH END

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

OOOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: 10°  
 AAAAA SOLAR + ALBEDO: 20°  
 OOOOO SOLAR + ALBEDO: 30°  
 XXXXX SOLAR + ALBEDO: 40°  
 \*\*\*\*\* SOLAR + ALBEDO: 52°  
 - - - PLANETARY (ALL)



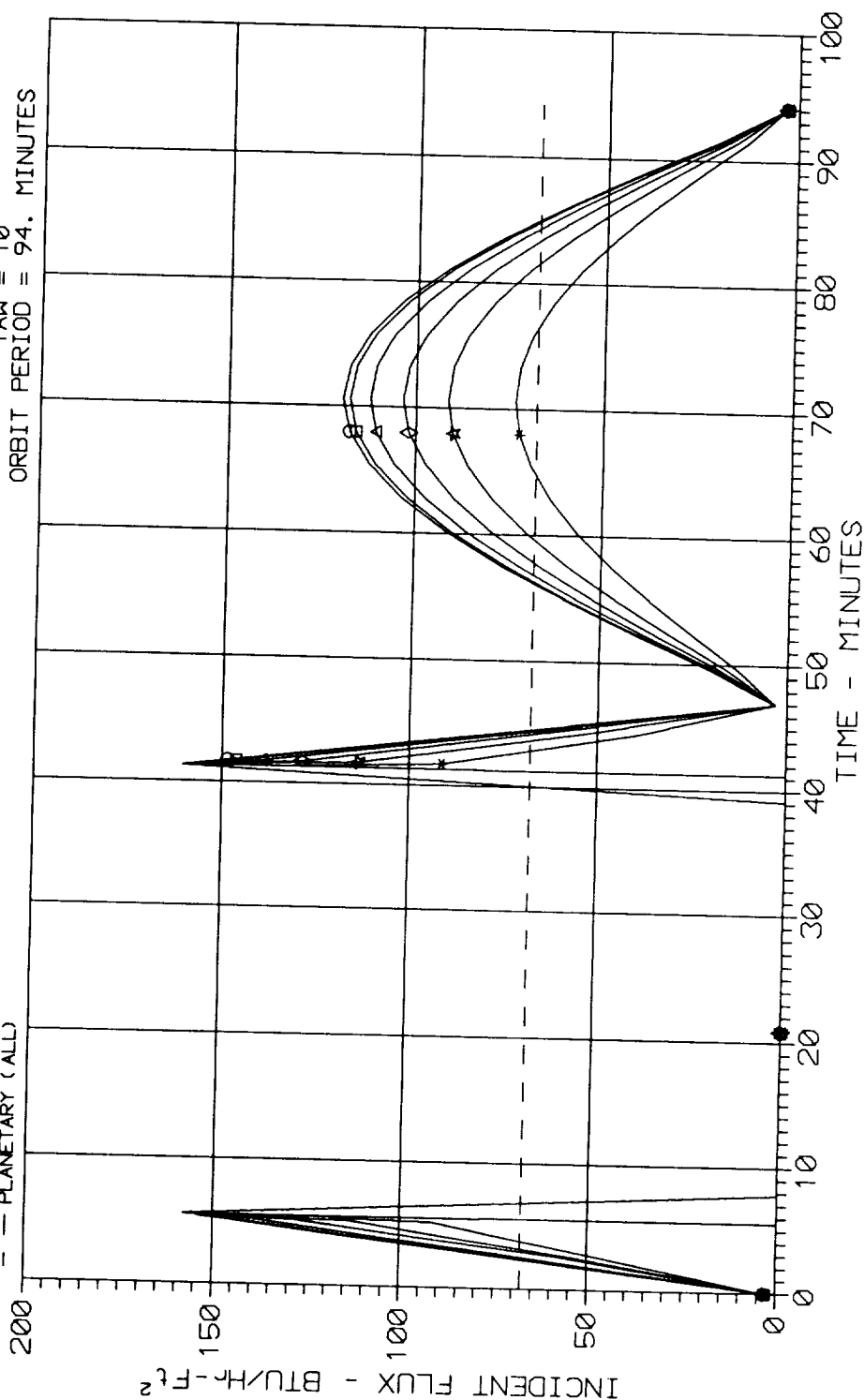
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

### EARTH END

OOOOO SOLAR + ALBEDO: 0°  
 EEEEE SOLAR + ALBEDO: -10°  
 AAAAA SOLAR + ALBEDO: -20°  
 VVVVV SOLAR + ALBEDO: -30°  
 \*\*\*\*\* SOLAR + ALBEDO: -40°  
 \*\*\*\*\* SOLAR + ALBEDO: -52°  
 — PLANETARY (ALL)

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES



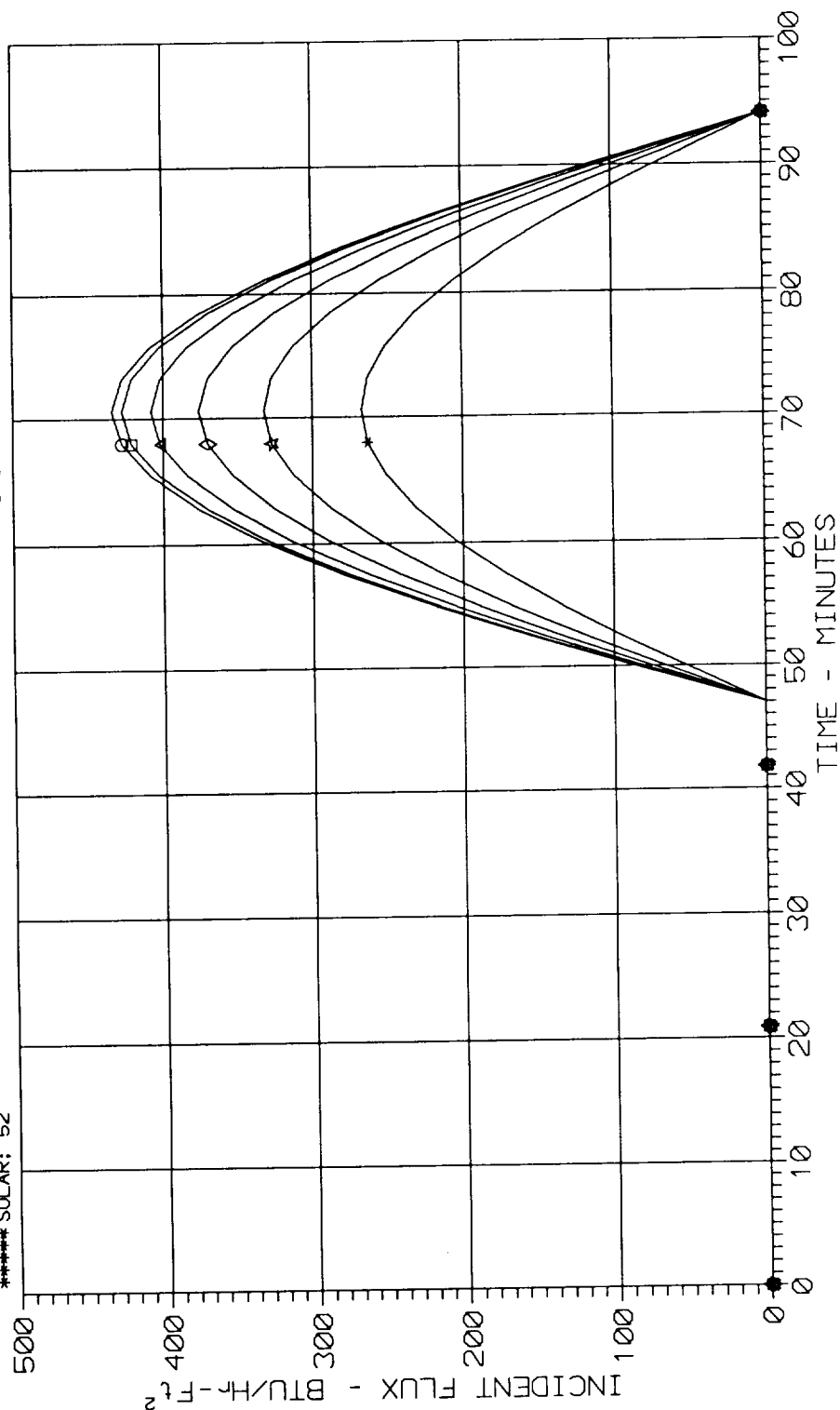
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR POSITIVE BETA ANGLES

### SPACE END

SOLAR CONSTANT = 434  $\text{Btu/Hr-Ft}^2$   
 PLANETARY FLUX = 77  $\text{Btu/Hr-Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

OOOOO SOLAR: 0°  
 EEEEE SOLAR: 10°  
 AAAAA SOLAR: 20°  
 OOOOO SOLAR: 30°  
 \*\*\*\*\* SOLAR: 40°  
 \*\*\*\*\* SOLAR: 52°



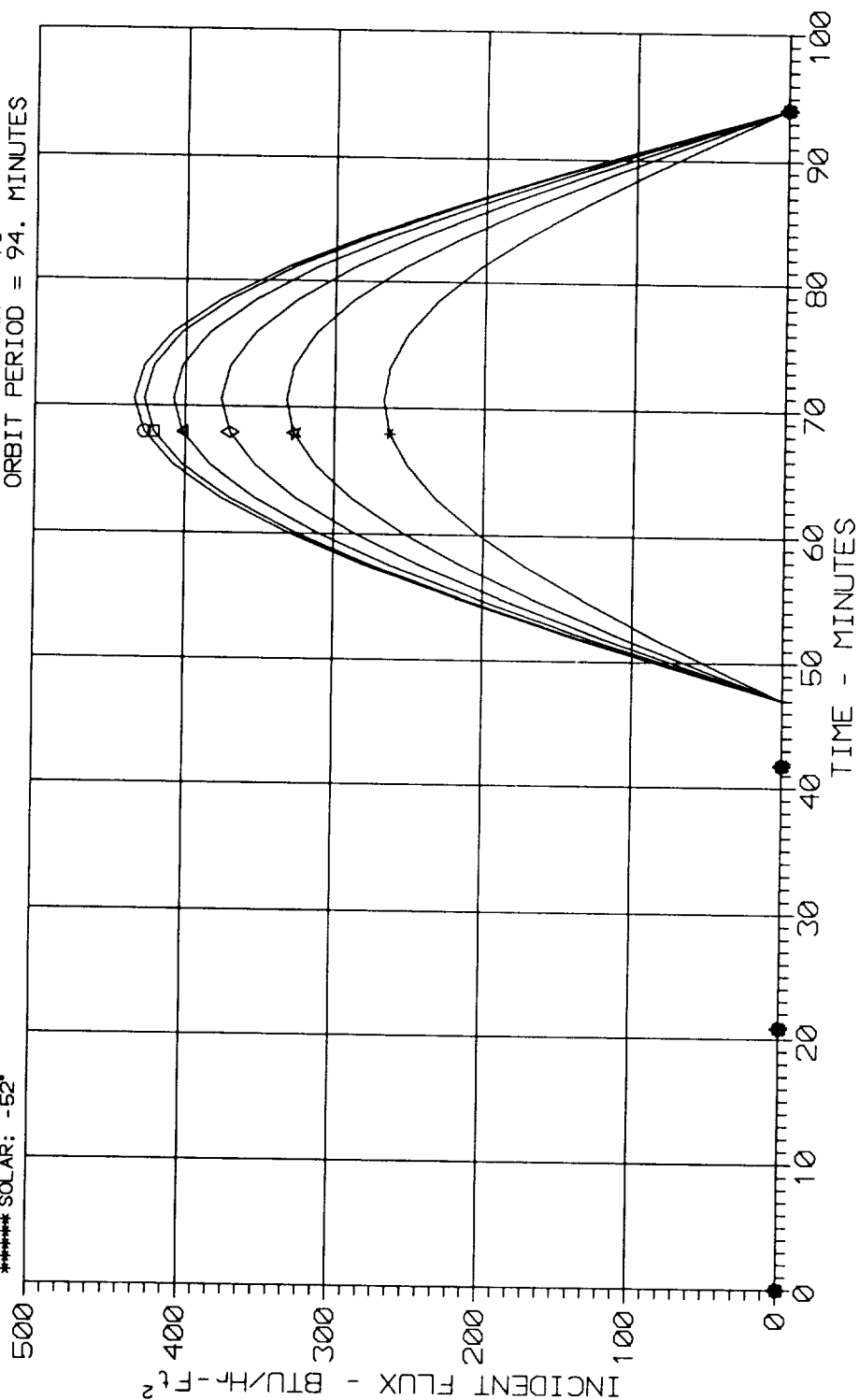
# LONG DURATION EXPOSURE FACILITY

## ORBITAL HEAT FLUX FOR NEGATIVE BETA ANGLES

### SPACE END

SOLAR CONSTANT = 434  $\text{Btu/Hr-Ft}^2$   
 PLANETARY FLUX = 77  $\text{Btu/Hr-Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°  
 ORBIT PERIOD = 94. MINUTES

00000 SOLAR: 0°  
 00000 SOLAR: -10°  
 00000 SOLAR: -20°  
 00000 SOLAR: -30°  
 00000 SOLAR: -40°  
 00000 SOLAR: -52°



INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 1	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg		
(Min)													
0.00	0.32	0.61	0.83	1.04	76.77	150.20	219.08	281.33	335.18	378.85	415.98		
2.61	0.01	0.02	0.03	0.05	73.21	146.26	214.89	277.02	330.76	374.52	412.06		
5.21	0.00	0.00	0.00	0.00	66.55	139.48	208.18	270.56	324.71	369.02	407.34		
5.54	0.00	0.00	0.00	0.00	65.10	138.34	206.74	268.17	320.64	362.27	400.52		
5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	395.03		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
44.42	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00		
47.04	0.01	0.08	0.14	0.19	0.40	0.62	0.82	1.04	1.04	0.00	0.00		
49.66	1.41	2.37	3.21	4.01	4.71	5.31	5.77	8.17	83.46	156.22	237.09		
52.28	4.66	6.77	8.35	9.69	10.74	11.46	11.83	20.26	94.62	166.10	245.03		
54.90	8.18	11.25	13.43	15.21	16.52	17.34	17.62	36.06	109.18	178.98	255.37		
57.52	11.48	15.35	18.07	20.24	21.79	22.69	22.89	55.03	126.67	194.45	267.79		
60.14	14.35	18.92	22.10	24.62	26.38	27.35	27.48	76.61	146.55	212.04	281.91		
62.76	16.71	21.85	25.42	28.22	30.16	31.18	31.25	100.12	168.22	231.21	297.31		
65.38	18.48	24.06	27.92	30.93	33.00	34.06	34.92	124.87	191.03	251.38	313.52		
67.99	19.62	25.48	29.52	32.66	34.82	35.91	35.91	150.09	214.27	271.94	330.04		
70.61	20.08	26.06	30.17	33.37	35.56	36.67	36.67	175.02	237.25	292.27	346.38		
73.22	19.86	25.78	29.86	33.04	35.21	36.09	36.09	198.91	259.26	311.74	362.03		
75.83	18.96	24.66	28.60	31.67	33.77	35.62	35.62	198.91	279.64	329.76	376.52		
78.44	17.41	22.73	26.42	29.30	33.31	35.55	35.55	240.69	297.77	345.80	389.41		
81.05	15.26	20.05	23.39	26.01	30.99	33.31	33.31	257.31	313.09	359.35	400.31		
83.66	12.56	16.70	19.59	21.89	26.69	30.16	30.16	270.39	325.14	370.01	408.89		
86.26	9.41	12.78	15.16	17.08	20.43	23.16	23.16	279.53	333.56	377.46	414.88		
88.87	5.95	8.41	10.22	11.72	14.27	16.88	16.88	284.44	338.09	381.46	418.11		
91.47	2.53	3.89	5.01	6.01	7.99	10.22	10.22	284.98	338.59	381.91	418.48		
94.07	0.32	0.61	0.83	1.04	76.77	150.20	219.08	281.33	335.18	378.85	415.98		
INCIDENT PLANETARY FLUX (BTU/Hr-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 1; INCIDENT THERMAL FLUX VS. TIME

INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 2	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME (Min)	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg		
0.00	0.99	76.79	150.18	219.01	281.36	335.19	378.83	410.98	430.71	437.36	427.82		
2.61	0.13	71.62	144.20	212.40	274.15	327.57	371.07	403.33	423.35	430.58	422.10		
5.21	0.02	58.77	131.07	198.16	259.22	312.41	356.11	388.99	410.05	418.67	412.27		
5.54	0.00	41.58	120.61	192.80	255.98	309.85	352.87	383.63	400.93	403.58	397.09		
5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	384.81		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
44.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
47.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
49.66	1.33	1.97	2.54	3.09	3.57	3.98	4.29	4.47	4.53	4.61	4.86		
52.28	4.59	6.35	7.64	8.72	9.54	10.07	10.30	10.21	9.81	9.12	8.45		
54.90	8.15	10.88	12.79	14.32	15.41	16.03	16.16	15.80	14.97	13.67	12.44		
57.52	11.52	15.07	17.53	19.45	20.79	21.49	21.55	20.94	19.70	17.86	16.28		
60.14	14.48	18.76	21.70	23.98	25.53	26.31	26.29	25.46	23.87	21.66	19.43		
62.76	16.96	21.83	25.17	27.75	29.48	30.32	30.24	29.24	27.35	24.60	21.82		
65.38	18.86	24.20	27.85	30.66	32.53	33.42	33.28	32.14	29.03	25.60	21.82		
67.99	20.14	25.79	29.65	32.61	34.58	35.49	35.33	33.26	29.03	24.60	20.79		
70.61	20.75	26.56	30.52	33.55	35.56	36.49	36.49	33.04	28.05	23.60	19.43		
73.22	20.69	26.47	30.42	33.45	35.51	36.41	36.41	32.96	27.08	22.63	18.28		
75.83	19.94	25.54	29.37	33.45	35.51	36.41	36.41	32.96	27.08	22.63	18.28		
78.44	18.53	23.79	27.14	31.87	34.50	36.49	36.49	32.96	27.08	22.63	18.28		
81.05	16.51	21.28	24.47	30.95	33.55	35.56	36.49	32.96	27.08	22.63	18.28		
83.66	13.94	18.85	21.28	27.05	29.03	30.95	32.87	34.79	36.71	38.63	40.55		
86.26	10.89	15.52	17.50	19.45	21.40	23.36	25.31	27.27	29.24	31.20	33.16		
88.87	7.47	10.02	12.88	15.63	18.48	21.33	24.18	27.03	29.88	32.73	35.58		
91.47	3.91	7.69	10.68	13.85	16.99	19.85	22.70	25.55	28.40	31.25	34.10		
94.07	0.99	76.79	150.18	219.01	281.36	335.19	378.83	410.98	430.71	437.36	427.82		
INCIDENT PLANETARY FLUX (BTU/HR-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 2; INCIDENT THERMAL FLUX VS. TIME



INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 3	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg		
(Min)													
0.00	205.70	281.37	335.17	378.79	410.99	430.72	437.36	430.72	411.03	378.84	325.15		
2.61	200.10	274.28	327.09	369.99	401.65	421.12	427.83	421.57	402.51	371.27	319.06		
5.21	187.93	259.24	310.14	351.63	382.44	401.63	408.62	403.19	385.51	356.14	306.73		
5.54	168.50	239.86	298.42	344.75	378.27	398.33	404.45	396.30	373.79	336.74	287.27		
5.59	152.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	271.47		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
44.42	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03		
47.04	0.11	0.08	0.04	0.01	0.00	0.00	0.00	0.00	0.13	0.24	0.37		
49.66	1.93	2.33	2.63	2.90	3.10	3.23	3.29	3.27	3.15	2.97	2.66		
52.28	5.32	6.75	7.73	8.50	9.02	9.26	9.22	8.90	8.31	7.49	6.18		
54.90	8.91	11.28	12.89	14.10	14.89	15.22	15.09	14.50	13.47	12.03	9.79		
57.52	12.30	15.50	17.65	19.27	20.30	20.72	20.50	19.67	18.23	16.24	13.17		
60.14	15.29	19.22	21.86	23.84	25.09	25.58	25.30	24.24	22.45	19.97	16.16		
62.76	17.81	22.36	25.41	27.68	29.12	29.67	29.32	28.08	25.99	23.11	18.67		
65.38	19.77	24.80	28.17	30.68	32.26	32.86	32.46	31.08	28.75	25.55	20.63		
67.99	21.12	26.48	30.06	32.74	34.42	35.05	34.62	33.14	30.65	27.23	35.67		
70.61	21.81	27.34	31.04	33.80	35.53	36.18	34.73	33.14	30.65	27.23	82.05		
73.22	21.83	35.77	57.65	77.79	95.55	110.42	121.33	129.74	132.79	133.01	127.77		
75.83	51.78	90.07	119.05	144.40	165.37	181.31	191.74	196.35	194.73	187.65	171.41		
78.44	92.03	140.16	175.67	205.84	229.75	246.69	256.13	257.79	251.61	237.79	211.67		
81.05	127.67	184.50	225.80	260.23	286.76	304.57	313.13	312.18	301.74	282.13	247.32		
83.66	157.61	221.75	267.91	305.93	334.65	353.20	361.03	357.88	343.86	319.39	277.26		
86.26	180.94	250.78	300.73	341.54	371.97	391.10	398.35	393.49	376.68	348.42	300.61		
88.87	196.96	270.71	323.26	365.99	397.59	417.12	423.97	417.94	399.21	368.35	316.63		
91.47	205.20	280.93	334.81	378.52	410.73	430.46	437.11	430.47	410.76	378.57	324.87		
94.07	205.70	281.37	335.17	378.79	410.99	430.72	437.36	430.72	411.03	378.84	325.15		
INCIDENT PLANETARY FLUX (BTU/HR-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 3; INCIDENT THERMAL FLUX VS. TIME

ROW 4		INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)														INCIDENT PLANETARY FLUX (BTU/Hr-SqFt)																	
TIME (Min)	BETA -52 Deg	BETA -40 Deg	BETA -30 Deg	BETA -20 Deg	BETA -10 Deg	BETA 0 Deg	BETA 10 Deg	BETA 20 Deg	BETA 30 Deg	BETA 40 Deg	BETA 52 Deg	BETA -52 Deg	BETA -40 Deg	BETA -30 Deg	BETA -20 Deg	BETA -10 Deg	BETA 0 Deg	BETA 10 Deg	BETA 20 Deg	BETA 30 Deg	BETA 40 Deg	BETA 52 Deg	BETA -52 Deg	BETA -40 Deg	BETA -30 Deg	BETA -20 Deg	BETA -10 Deg	BETA 0 Deg	BETA 10 Deg	BETA 20 Deg	BETA 30 Deg	BETA 40 Deg	BETA 52 Deg
0.00	370.91	410.99	430.72	437.36	430.73	411.00	378.79	335.09	281.33	219.03	135.67	370.91	410.99	430.72	437.36	430.73	411.00	378.79	335.09	281.33	219.03	135.67	370.91	410.99	430.72	437.36	430.73	411.00	378.79	335.09	281.33	219.03	135.67
2.61	364.83	403.50	422.36	428.45	421.53	401.83	369.96	326.85	273.81	212.48	130.55	364.83	403.50	422.36	428.45	421.53	401.83	369.96	326.85	273.81	212.48	130.55	364.83	403.50	422.36	428.45	421.53	401.83	369.96	326.85	273.81	212.48	130.55
5.21	353.00	389.02	406.11	410.89	403.19	383.23	351.63	309.35	257.67	198.18	119.01	353.00	389.02	406.11	410.89	403.19	383.23	351.63	309.35	257.67	198.18	119.01	353.00	389.02	406.11	410.89	403.19	383.23	351.63	309.35	257.67	198.18	119.01
5.54	334.41	370.51	394.92	404.32	399.21	380.09	347.66	302.78	246.49	179.68	100.48	334.41	370.51	394.92	404.32	399.21	380.09	347.66	302.78	246.49	179.68	100.48	334.41	370.51	394.92	404.32	399.21	380.09	347.66	302.78	246.49	179.68	100.48
5.59	319.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.40	319.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.40	319.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.40
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44.42	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
47.04	0.51	0.35	0.20	0.05	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
49.66	3.02	3.28	3.40	3.44	3.38	3.22	3.00	2.71	2.36	2.00	1.54	3.02	3.28	3.40	3.44	3.38	3.22	3.00	2.71	2.36	2.00	1.54	3.02	3.28	3.40	3.44	3.38	3.22	3.00	2.71	2.36	2.00	1.54
52.28	6.55	7.74	8.47	8.96	9.18	9.11	8.78	8.17	7.32	6.27	4.76	6.55	7.74	8.47	8.96	9.18	9.11	8.78	8.17	7.32	6.27	4.76	6.55	7.74	8.47	8.96	9.18	9.11	8.78	8.17	7.32	6.27	4.76
54.90	10.10	12.18	13.50	14.42	14.90	14.93	14.50	13.64	12.35	10.70	8.25	10.10	12.18	13.50	14.42	14.90	14.93	14.50	13.64	12.35	10.70	8.25	10.10	12.18	13.50	14.42	14.90	14.93	14.50	13.64	12.35	10.70	8.25
57.52	13.40	16.28	18.15	19.46	20.18	20.29	19.78	18.67	17.00	14.80	11.54	13.40	16.28	18.15	19.46	20.18	20.29	19.78	18.67	17.00	14.80	11.54	13.40	16.28	18.15	19.46	20.18	20.29	19.78	18.67	17.00	14.80	11.54
60.14	16.32	19.92	22.26	23.92	24.86	25.04	24.46	23.13	21.11	18.44	14.45	16.32	19.92	22.26	23.92	24.86	25.04	24.46	23.13	21.11	18.44	14.45	16.32	19.92	22.26	23.92	24.86	25.04	24.46	23.13	21.11	18.44	14.45
62.76	18.77	22.97	25.71	27.66	28.78	29.02	28.38	26.88	24.56	21.49	16.90	18.77	22.97	25.71	27.66	28.78	29.02	28.38	26.88	24.56	21.49	16.90	18.77	22.97	25.71	27.66	28.78	29.02	28.38	26.88	24.56	21.49	16.90
65.38	51.78	25.35	28.39	30.58	31.83	32.12	31.43	29.79	27.24	23.87	18.81	51.78	25.35	28.39	30.58	31.83	32.12	31.43	29.79	27.24	23.87	18.81	51.78	25.35	28.39	30.58	31.83	32.12	31.43	29.79	27.24	23.87	18.81
67.99	95.36	68.14	43.12	32.58	33.93	34.25	33.53	31.79	29.09	25.50	20.11	95.36	68.14	43.12	32.58	33.93	34.25	33.53	31.79	29.09	25.50	20.11	95.36	68.14	43.12	32.58	33.93	34.25	33.53	31.79	29.09	25.50	20.11
70.61	139.63	123.22	105.39	84.37	60.77	35.33	34.60	32.81	30.03	26.33	20.78	139.63	123.22	105.39	84.37	60.77	35.33	34.60	32.81	30.03	26.33	20.78	139.63	123.22	105.39	84.37	60.77	35.33	34.60	32.81	30.03	26.33	20.78
73.22	183.24	177.48	166.74	150.92	130.53	106.17	78.58	48.60	30.04	26.34	20.79	183.24	177.48	166.74	150.92	130.53	106.17	78.58	48.60	30.04	26.34	20.79	183.24	177.48	166.74	150.92	130.53	106.17	78.58	48.60	30.04	26.34	20.79
75.83	224.86	229.27	225.28	214.45	197.11	173.77	145.15	112.13	75.70	36.96	20.14	224.86	229.27	225.28	214.45	197.11	173.77	145.15	112.13	75.70	36.96	20.14	224.86	229.27	225.28	214.45	197.11	173.77	145.15	112.13	75.70	36.96	20.14
78.44	263.23	277.01	279.26	273.02	258.48	236.09	206.53	170.69	129.67	84.71	27.42	263.23	277.01	279.26	273.02	258.48	236.09	206.53	170.69	129.67	84.71	27.42	263.23	277.01	279.26	273.02	258.48	236.09	206.53	170.69	129.67	84.71	27.42
81.05	297.19	319.26	327.02	324.84	312.80																												

INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 5	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME	-52 Deg	-40 Deg	-30 Deg	-20 Deg	BETA	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg	
(Min)													
0.00	437.10	430.72	410.99	378.77	335.15	328.46	281.36	219.03	150.08	76.74	1.09	0.69	
2.61	431.83	424.60	404.46	372.10	328.46	274.87	212.95	144.56	71.79	0.08		0.07	
5.21	423.48	414.55	393.26	360.05	315.90	262.15	200.43	132.63	60.79	0.01		0.01	
5.54	410.73	401.88	385.60	355.55	313.17	259.99	197.71	128.13	53.15	0.00		0.00	
5.59	400.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
41.30	124.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
41.36	113.24	26.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
41.80	100.62	12.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
44.42	93.08	3.33	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00		0.00	
47.04	91.62	1.09	0.79	0.49	0.35	0.23	0.11	0.00	0.00	0.00		0.00	
49.66	97.46	8.11	4.92	4.83	4.59	4.21	3.74	3.18	2.55	1.91		1.18	
52.28	108.91	21.83	10.12	10.46	10.49	10.20	9.59	8.70	7.55	6.19		4.32	
54.90	125.13	42.55	15.15	15.92	16.21	16.00	15.31	14.16	12.57	10.60		7.78	
57.52	145.58	67.99	19.76	20.92	21.45	21.33	20.56	19.16	17.18	14.68		11.05	
60.14	169.62	97.91	34.74	25.31	26.05	26.00	25.16	23.55	21.23	18.26		13.92	
62.76	196.54	131.40	72.60	28.96	29.88	29.88	28.98	27.20	24.59	21.24		16.30	
65.38	225.50	167.44	113.35	55.81	32.81	32.86	31.91	30.00	27.17	23.52		18.13	
67.99	255.64	204.94	155.74	101.80	44.78	34.84	33.86	31.85	28.88	25.03		19.35	
70.61	286.03	242.75	198.48	148.19	93.39	35.76	34.76	32.72	29.68	25.73		19.91	
73.22	315.75	279.73	240.29	193.55	140.93	84.03	34.60	32.56	29.53	25.61		19.05	
75.83	343.90	314.76	279.89	236.52	185.96	129.75	69.60	31.39	28.45	24.65		19.05	
78.44	369.62	346.76	316.07	275.78	227.10	171.53	110.75	46.60	26.46	22.89		17.64	
81.05	392.13	374.77	347.74	310.14	263.12	208.10	146.76	80.96	23.64	20.39		15.64	
83.66	410.75	397.94	373.93	338.56	292.90	238.34	176.54	109.38	38.89	17.22		13.09	
86.26	424.92	415.56	393.85	360.17	315.55	261.34	199.20	130.99	58.81	13.47		10.09	
88.87	434.19	427.10	406.90	374.33	330.39	276.41	214.03	145.15	71.86	9.27		6.76	
91.47	438.29	432.20	412.67	380.59	336.95	283.07	220.59	151.42	77.67	4.81		3.33	
94.07	437.10	430.72	410.99	378.77	335.15	281.36	219.03	150.08	76.74	1.09		0.69	
INCIDENT PLANETARY FLUX (BTU/Hr-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 5; INCIDENT THERMAL FLUX VS. TIME

INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 6	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg		
0.00	386.20	335.19	281.37	219.01	150.17	76.80	1.09	0.76	0.59	0.41	0.19		
2.61	383.13	331.93	278.20	216.07	147.39	74.27	0.05	0.03	0.02	0.01	0.01		
5.21	380.49	329.00	275.04	212.73	143.96	70.82	0.00	0.00	0.00	0.00	0.00		
5.54	376.98	325.57	272.97	211.51	143.23	70.24	0.00	0.00	0.00	0.00	0.00		
5.59	374.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	299.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	296.62	224.12	154.64	81.03	5.39	0.00	0.00	0.00	0.00	0.00	0.00		
41.80	293.27	220.50	152.37	79.63	4.48	0.00	0.00	0.00	0.00	0.00	0.00		
44.42	291.60	218.11	149.57	76.52	1.16	0.02	0.01	0.01	0.01	0.00	0.00		
47.04	292.84	219.10	150.18	76.71	1.09	0.85	0.58	0.33	0.24	0.15	0.03		
49.66	297.26	224.42	156.09	83.01	7.41	5.81	5.17	4.41	3.54	2.62	1.55		
52.28	303.14	231.74	164.34	91.96	16.78	11.91	11.16	10.06	8.66	7.02	4.78		
54.90	310.13	240.43	174.17	102.63	27.96	17.71	16.87	15.51	13.68	11.44	8.25		
57.52	318.01	250.23	185.26	114.65	40.56	22.97	22.05	20.45	18.24	15.47	11.48		
60.14	326.54	260.84	197.25	127.67	54.20	27.53	26.54	24.74	22.19	18.96	14.28		
62.76	335.46	271.94	209.80	141.28	68.47	31.26	30.21	28.24	25.41	21.82	16.57		
65.38	344.50	283.19	222.51	155.08	82.93	34.04	32.94	30.85	27.82	23.94	18.27		
67.99	353.38	294.24	235.01	168.64	96.37	35.78	34.66	32.49	29.33	25.28	19.34		
70.61	361.84	304.77	246.91	181.55	110.67	36.43	35.30	33.10	29.89	25.78	19.75		
73.22	369.62	314.45	257.85	193.42	123.11	49.07	34.86	32.68	29.50	25.43	19.47		
75.83	376.48	322.98	267.50	203.89	134.09	60.21	33.34	31.23	28.16	24.25	18.52		
78.44	382.21	330.12	275.57	212.65	143.26	69.52	30.78	28.79	25.92	22.26	16.93		
81.05	386.65	335.64	281.81	219.41	150.35	76.73	27.28	25.45	22.84	19.54	14.75		
83.66	389.65	339.37	286.02	223.99	155.15	81.60	22.93	21.29	19.01	16.15	12.03		
86.26	391.12	341.20	288.10	226.24	157.51	83.99	17.86	16.46	14.56	12.21	8.88		
88.87	391.02	341.08	287.96	226.09	157.35	83.83	12.24	11.09	9.61	7.85	5.44		
91.47	389.35	339.00	285.62	223.55	154.70	81.14	6.26	5.43	4.46	3.40	2.12		
94.07	386.20	335.19	281.37	219.01	150.17	76.80	1.09	0.76	0.59	0.41	0.19		
INCIDENT PLANETARY FLUX (BTU/Hr-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 6; INCIDENT THERMAL FLUX VS. TIME

INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 7	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME (Min)	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg		
0.00	232.09	150.20	76.78	1.04	0.82	0.62	0.40	0.19	0.14	0.08	0.01		
2.61	231.77	150.34	77.41	2.17	0.01	0.00	0.00	0.00	0.00	0.00	0.00		
5.21	235.55	155.30	83.12	8.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.54	242.23	162.02	87.19	10.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.59	247.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	394.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	400.51	361.83	320.25	267.81	206.39	137.94	64.76	0.00	0.00	0.00	0.00		
41.80	407.34	369.02	324.71	270.56	208.18	139.48	66.55	0.00	0.00	0.00	0.00		
44.42	412.05	374.52	330.76	277.02	214.89	146.26	73.21	0.05	0.03	0.02	0.01		
47.04	415.97	378.85	335.18	281.33	219.08	150.20	76.77	1.04	0.83	0.61	0.32		
49.66	418.48	381.90	338.59	284.98	222.72	153.69	79.99	6.01	5.01	3.89	2.51		
52.28	418.12	381.46	338.09	284.44	222.15	153.11	79.41	11.72	10.22	8.41	5.92		
54.90	414.91	377.46	333.56	279.53	217.00	147.88	74.27	17.08	15.16	12.78	9.37		
57.52	408.92	370.01	325.14	270.39	207.43	138.16	64.69	21.89	19.59	16.70	12.51		
60.14	400.35	359.35	313.09	257.31	193.72	124.24	50.99	26.01	23.39	20.05	15.20		
62.76	389.46	345.80	297.77	240.69	176.30	106.55	33.37	29.30	26.42	22.73	17.35		
65.38	376.57	329.76	279.64	221.02	155.68	85.62	33.77	31.67	28.60	24.66	18.90		
67.99	362.09	311.74	259.26	198.91	132.51	62.09	35.21	33.04	29.86	25.78	19.79		
70.61	346.44	292.27	237.25	175.02	107.48	36.67	35.56	33.37	30.17	26.06	20.01		
73.22	330.10	271.94	214.27	150.09	81.35	35.91	34.82	32.66	29.52	25.48	19.54		
75.83	313.58	251.38	191.03	124.87	54.92	34.06	33.00	30.93	27.92	24.06	18.41		
78.44	297.36	231.21	168.22	100.12	31.25	31.18	30.16	28.22	25.42	21.85	16.64		
81.05	281.96	212.04	146.55	76.61	27.48	27.35	26.38	24.62	22.10	18.92	14.29		
83.66	267.82	194.45	126.67	54.13	22.89	22.69	21.79	20.24	18.07	15.35	11.43		
86.26	255.39	178.98	109.18	36.06	17.62	17.34	16.52	15.21	13.43	11.25	8.14		
88.87	245.04	166.10	94.62	20.26	11.83	11.46	10.74	9.69	8.35	6.77	4.63		
91.47	237.10	156.22	83.46	8.17	5.77	5.31	4.71	4.01	3.21	2.37	1.40		
94.07	232.09	150.20	76.78	1.04	0.82	0.62	0.40	0.19	0.14	0.08	0.01		
INCIDENT PLANETARY FLUX (BTU/HR-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 7; INCIDENT THERMAL FLUX VS. TIME

INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 8	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME (Min)	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg		
0.00	16.27	0.86	0.61	0.35	0.24	0.16	0.08	0.00	0.00	0.00	0.00		
2.61	18.43	0.06	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.21	27.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.54	42.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.59	54.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	383.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	397.09	402.59	400.05	382.82	352.10	308.95	255.21	192.00	121.23	43.95	0.00		
41.80	412.27	418.67	410.05	388.99	356.11	312.41	259.22	198.16	131.08	60.01	0.02		
44.42	422.10	430.58	423.35	403.33	371.07	327.57	274.15	212.40	144.20	71.62	0.14		
47.04	427.81	437.36	430.72	410.99	378.84	335.20	281.37	219.03	150.20	76.81	1.01		
49.66	428.60	438.35	431.83	412.19	380.03	336.32	282.40	219.90	150.73	76.99	3.95		
52.28	423.10	431.50	424.09	403.80	371.23	327.39	273.60	211.49	142.96	70.09	7.51		
54.90	411.47	417.04	407.74	386.06	352.64	308.51	255.00	193.75	126.61	55.62	10.94		
57.52	394.08	395.39	383.27	359.50	324.81	280.25	227.18	167.20	102.14	33.98	13.99		
60.14	371.44	367.22	351.43	324.95	288.60	243.48	190.96	132.64	70.29	21.42	16.58		
62.76	344.24	333.39	313.17	283.44	245.10	199.31	147.46	91.14	32.04	23.95	18.60		
65.38	313.32	294.91	269.68	236.25	195.64	149.08	98.00	43.94	29.55	25.71	20.01		
67.99	279.61	252.97	222.26	184.79	141.71	94.33	44.08	33.65	30.61	26.65	20.76		
70.61	244.14	208.83	172.36	130.65	84.97	36.71	35.77	33.75	30.71	26.73	20.82		
73.22	207.97	163.83	121.49	75.45	35.54	35.70	34.78	32.81	29.84	25.96	20.21		
75.83	172.22	119.35	71.20	32.33	33.48	33.61	32.73	30.85	28.03	24.36	18.92		
78.44	137.97	76.73	27.50	29.40	30.41	30.50	29.66	27.92	25.33	21.98	17.01		
81.05	106.26	37.27	24.00	25.61	26.44	26.46	25.69	24.13	21.84	18.88	14.53		
83.66	78.05	17.95	19.81	21.06	21.67	21.62	20.92	19.58	17.64	15.17	11.56		
86.26	54.20	13.74	15.04	15.89	16.25	16.12	15.50	14.41	12.88	10.96	8.18		
88.87	35.45	9.16	9.86	10.26	10.35	10.13	9.60	8.78	7.70	6.40	4.60		
91.47	22.46	4.46	4.54	4.49	4.31	4.00	3.59	3.12	2.56	2.00	1.34		
94.07	16.27	0.86	0.61	0.35	0.24	0.16	0.08	0.00	0.00	0.00	0.00		
INCIDENT PLANETARY FLUX (BTU/HR-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 8; INCIDENT THERMAL FLUX VS. TIME

INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)												
ROW 9	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg	
(Min)												
0.00	0.37	0.24	0.13	0.02	0.00	0.00	0.00	0.01	0.04	0.08	0.11	
2.61	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
5.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
41.30	269.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	152.37	
41.36	287.27	335.47	372.66	395.26	403.46	397.18	377.29	343.71	297.48	238.59	168.50	
41.80	306.73	356.14	385.51	403.19	408.62	401.63	382.44	351.63	310.14	259.24	187.93	
44.42	319.05	371.27	402.51	421.57	427.83	421.12	401.65	369.99	327.09	274.28	200.11	
47.04	325.14	378.84	411.03	430.72	437.36	430.72	410.99	378.79	335.17	281.37	205.70	
49.66	324.88	378.57	410.76	430.48	437.11	430.46	410.73	378.52	334.82	280.93	205.19	
52.28	316.65	368.35	399.21	417.94	423.97	417.12	397.60	365.99	323.26	270.72	196.94	
54.90	300.64	348.43	376.69	393.50	398.36	391.11	371.98	341.55	300.74	250.79	180.91	
57.52	277.31	319.40	343.87	357.89	361.04	353.22	334.66	305.94	267.92	221.76	157.57	
60.14	247.37	282.15	301.76	312.19	313.15	304.59	286.77	260.24	225.81	184.51	127.63	
62.76	211.74	237.81	251.63	257.80	256.15	246.71	229.77	205.67	175.50	140.17	91.99	
65.38	171.48	187.72	195.01	196.37	191.76	181.33	165.38	143.85	118.20	89.98	51.73	
67.99	127.84	133.42	133.62	129.75	121.95	108.87	94.99	77.19	57.67	35.78	21.77	
70.61	82.13	76.55	69.32	59.99	48.83	36.20	35.54	33.81	31.05	27.35	21.76	
73.22	35.75	27.24	30.66	33.16	34.64	35.07	34.44	32.76	30.08	26.49	21.06	
75.83	20.70	25.56	28.77	31.10	32.48	32.88	32.28	30.70	28.18	24.81	19.72	
78.44	18.74	23.12	26.01	28.10	29.34	29.69	29.14	27.70	25.42	22.37	17.76	
81.05	16.22	19.99	22.46	24.25	25.31	25.60	25.11	23.85	21.88	19.23	15.24	
83.66	13.22	16.26	18.24	19.68	20.52	20.73	20.31	19.28	17.66	15.50	12.25	
86.26	9.84	12.04	13.48	14.51	15.10	15.23	14.90	14.11	12.90	11.29	8.88	
88.87	6.22	7.50	8.32	8.91	9.23	9.27	9.02	8.51	7.74	6.75	5.29	
91.47	2.67	2.98	3.16	3.27	3.30	3.23	3.10	2.90	2.63	2.33	1.92	
94.07	0.37	0.24	0.13	0.02	0.00	0.00	0.00	0.01	0.04	0.08	0.11	
INCIDENT PLANETARY FLUX (BTU/Hr-SqFt)												
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 10	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME (Min)	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg		
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.05	0.20	0.35	0.52		
2.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05		
5.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	80.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	97.97	178.47	245.41	301.79	346.71	378.98	398.26	403.33	394.03	369.29	319.03		
41.80	119.00	198.18	257.67	309.35	351.63	383.23	403.19	410.89	406.11	389.02	334.41		
44.42	130.55	212.48	273.81	326.85	369.96	401.83	421.53	428.44	422.36	403.50	353.00		
47.04	135.67	219.03	281.33	335.09	378.79	411.00	430.72	437.36	430.72	410.99	364.84		
49.66	135.13	218.60	281.04	334.94	378.66	410.88	430.61	437.26	430.62	410.90	370.92		
52.28	127.33	208.95	270.13	323.10	366.26	398.28	418.21	425.43	419.72	401.26	370.84		
54.90	112.13	190.03	248.74	299.90	341.94	373.59	393.89	402.22	398.33	382.34	363.07		
57.52	89.93	162.42	217.53	266.02	306.44	337.54	358.39	368.35	367.11	354.73	347.86		
60.14	61.43	126.95	177.43	222.51	260.84	291.24	312.79	324.84	327.02	319.26	325.65		
62.76	27.47	84.70	129.66	170.69	206.53	236.09	258.48	273.01	279.25	277.01	297.14		
65.38	20.20	36.96	75.69	112.12	145.15	173.76	197.10	214.45	225.28	229.26	263.18		
67.99	20.85	26.33	30.03	47.27	78.11	106.16	130.52	150.92	166.73	177.48	224.80		
70.61	20.84	26.32	30.02	32.80	34.59	35.33	60.77	84.36	105.39	123.22	183.18		
73.22	20.17	25.49	29.08	31.78	33.52	34.24	33.92	32.57	43.12	68.13	139.57		
75.83	18.86	23.86	27.24	29.78	31.43	32.12	31.83	30.57	28.39	25.34	95.30		
78.44	16.96	21.49	24.55	26.87	28.37	29.01	28.77	27.66	25.70	22.97	51.71		
81.05	14.50	18.43	21.10	23.13	24.45	25.03	24.85	23.92	22.25	19.91	16.27		
83.66	11.58	14.80	16.99	18.67	19.78	20.29	20.18	19.46	18.14	16.28	13.35		
86.26	8.28	10.69	12.35	13.63	14.50	14.93	14.90	14.42	13.50	12.17	10.06		
88.87	4.79	6.27	7.32	8.17	8.77	9.11	9.17	8.96	8.47	7.74	6.53		
91.47	1.55	1.99	2.36	2.71	3.00	3.22	3.38	3.44	3.40	3.28	3.01		
94.07	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.05	0.20	0.35	0.52		
INCIDENT PLANETARY FLUX (BTU/Hr-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 10; INCIDENT THERMAL FLUX VS. TIME



INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)												
ROW 11	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME (Min)	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg	
0.00	0.00	0.00	0.00	0.00	0.11	0.23	0.35	0.49	0.79	1.09	91.63	
2.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	3.33	93.08	
5.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.89	100.62	
5.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.53	113.24	
5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	123.56	
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
41.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
41.36	0.00	0.00	52.41	127.46	197.07	259.24	312.53	354.88	385.00	401.05	400.20	
41.80	0.01	0.01	60.79	132.63	200.43	262.15	315.89	360.05	393.26	414.55	410.73	
44.42	0.07	0.08	71.79	144.56	212.95	274.87	328.46	372.10	404.46	424.60	423.48	
47.04	0.69	1.09	76.74	150.08	219.03	281.36	335.15	378.77	410.99	430.72	431.11	
49.66	3.34	4.81	77.67	151.43	220.59	283.07	336.95	380.59	412.67	432.20	438.29	
52.28	6.78	9.27	71.86	145.15	214.03	276.41	330.39	374.33	406.89	427.10	434.18	
54.90	10.13	13.47	58.81	130.99	199.20	261.35	315.55	360.17	393.85	415.56	424.89	
57.52	13.14	17.22	38.89	109.38	176.54	238.34	292.90	338.56	373.93	397.94	410.72	
60.14	15.69	20.39	23.64	80.96	146.76	208.10	263.12	310.14	347.74	374.77	392.09	
62.76	17.70	22.89	26.46	46.60	110.75	171.53	227.10	275.78	316.07	346.76	369.57	
65.38	19.11	24.65	28.45	31.39	69.60	129.75	185.96	236.52	279.89	314.75	343.84	
67.99	19.88	25.61	29.53	32.56	34.60	84.03	140.93	193.55	240.29	279.73	315.69	
70.61	19.98	25.73	29.68	32.72	34.76	35.76	93.39	148.19	198.48	242.75	285.97	
73.22	19.42	25.03	28.88	31.85	33.86	34.84	44.78	101.80	155.74	204.94	255.58	
75.83	18.20	23.52	27.17	30.00	31.91	32.86	32.81	55.81	113.35	167.44	225.45	
78.44	16.37	21.24	24.59	27.20	28.98	29.88	29.88	28.96	72.60	131.40	196.49	
81.05	13.98	18.26	21.23	23.55	25.16	26.00	26.05	25.31	34.74	97.91	169.58	
83.66	11.10	14.68	17.18	19.16	20.56	21.33	21.45	20.92	19.76	67.99	145.54	
86.26	7.82	10.60	12.57	14.16	15.31	16.00	16.21	15.92	15.15	42.55	125.10	
88.87	4.35	6.19	7.55	8.70	9.59	10.20	10.49	10.46	10.12	22.36	108.89	
91.47	1.19	1.91	2.55	3.18	3.74	4.21	4.59	4.83	4.92	8.11	97.45	
94.07	0.00	0.00	0.00	0.00	0.11	0.23	0.35	0.49	0.79	1.09	91.63	
INCIDENT PLANETARY FLUX (BTU/HR-SqFt)												
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)													
ROW 12	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
TIME	-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg		
(Min)													
0.00	0.03	0.15	0.24	0.33	0.58	0.85	1.09	76.71	150.18	219.10	292.85		
2.61	0.00	0.00	0.01	0.01	0.01	0.02	1.16	76.52	149.57	218.11	291.60		
5.21	0.00	0.00	0.00	0.00	0.00	0.00	4.48	79.63	152.37	220.50	293.27		
5.54	0.00	0.00	0.00	0.00	0.00	0.00	5.21	80.85	154.44	223.90	296.62		
5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	299.40		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
44.42	0.01	0.01	0.02	0.03	0.05	0.05	0.05	0.05	0.05	0.05	0.05		
47.04	0.19	0.41	0.59	0.76	1.09	1.09	1.09	1.09	1.09	1.09	1.09		
49.66	2.13	3.40	4.46	5.43	6.26	8.14	154.70	223.55	285.62	339.00	386.21		
52.28	5.46	7.85	9.61	11.09	12.24	83.83	157.35	226.09	287.96	341.08	389.35		
54.90	8.92	12.21	14.56	16.46	17.86	83.99	157.51	226.24	288.10	341.20	391.01		
57.52	12.08	16.15	19.01	21.29	22.93	81.60	155.15	223.99	286.02	339.37	389.61		
60.14	14.80	19.54	22.84	25.45	27.28	76.73	150.35	219.41	281.81	335.64	386.61		
62.76	16.99	22.26	25.92	28.79	30.78	69.52	143.26	212.65	275.57	330.12	382.17		
65.38	18.59	24.25	28.16	31.22	33.34	60.21	134.09	203.89	267.50	322.98	376.43		
67.99	19.54	25.43	29.50	32.68	34.86	49.07	123.11	193.42	257.85	314.45	369.56		
70.61	19.82	25.78	29.89	33.10	35.30	36.43	110.67	181.55	246.91	304.77	361.78		
73.22	19.42	25.28	29.33	32.49	34.66	35.78	97.14	168.64	235.01	294.24	353.32		
75.83	18.34	23.94	27.82	30.85	32.94	34.04	82.93	155.08	222.51	283.19	344.44		
78.44	16.63	21.82	25.41	28.24	30.21	31.26	68.47	141.28	209.80	271.94	335.41		
81.05	14.34	18.96	22.19	24.74	26.54	27.53	54.20	127.67	197.25	260.84	326.49		
83.66	11.53	15.47	18.24	20.45	22.05	22.97	40.56	114.65	185.26	250.23	317.98		
86.26	8.29	11.44	13.68	15.51	16.87	17.71	27.96	102.63	174.17	240.43	310.11		
88.87	4.81	7.02	8.66	10.06	11.16	11.91	16.78	91.96	164.34	231.74	303.13		
91.47	1.56	2.62	3.54	4.41	5.17	5.81	7.41	83.01	156.09	224.42	297.26		
94.07	0.03	0.15	0.24	0.33	0.58	0.85	1.09	76.71	150.18	219.10	292.85		
INCIDENT PLANETARY FLUX (BTU/HR-SqFt)													
	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62

ROW 12; INCIDENT THERMAL FLUX VS. TIME

EARTH END		INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)											
TIME		BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA	BETA
(Min)		-52 Deg	-40 Deg	-30 Deg	-20 Deg	-10 Deg	0 Deg	10 Deg	20 Deg	30 Deg	40 Deg	52 Deg	
0.00		3.04	3.03	3.05	3.03	3.02	3.06	3.02	3.03	3.05	3.03	3.05	
2.61		46.76	54.19	57.54	69.42	74.32	75.46	74.32	70.94	65.42	57.95	41.65	
5.21		91.43	113.72	128.55	139.49	146.18	148.44	146.18	139.49	128.55	113.72	91.43	
5.54		133.60	157.58	157.46	157.37	157.33	157.33	157.33	157.37	157.43	157.58	133.60	
5.59		157.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	158.16	
7.82		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10.42		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13.03		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15.64		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18.25		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20.86		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23.47		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26.09		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28.70		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
31.32		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33.94		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
36.56		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
39.18		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
41.30		160.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	158.61	
41.36		133.60	159.95	159.90	159.86	159.84	160.31	159.84	159.86	159.49	159.95	133.60	
41.80		91.43	113.72	128.55	139.49	146.18	148.44	146.18	139.49	128.55	113.72	91.43	
44.42		39.84	54.32	65.42	70.94	74.32	75.46	74.32	70.94	65.42	55.00	42.99	
47.04		3.04	3.03	3.05	3.03	3.02	3.06	3.02	3.03	3.05	3.03	3.05	
49.66		13.14	16.12	18.13	19.62	20.54	20.86	20.54	19.62	18.13	16.12	13.13	
52.28		25.21	31.33	35.40	38.42	40.26	40.88	40.26	38.42	35.40	31.33	25.18	
54.90		36.79	45.78	51.76	56.16	58.86	59.76	58.86	56.16	51.76	45.78	36.74	
57.52		47.30	58.86	66.54	72.20	75.67	76.83	75.67	72.20	66.54	58.86	47.23	
60.14		56.37	70.14	79.30	86.04	90.17	91.57	90.17	86.04	79.30	70.14	56.29	
62.76		63.73	79.30	89.65	97.27	101.94	103.52	101.94	97.27	89.65	79.30	63.64	
65.38		69.15	86.04	97.27	105.55	110.62	112.32	110.62	105.55	97.27	86.04	69.05	
67.99		72.47	90.17	101.94	110.62	115.93	117.71	115.93	110.62	101.94	90.17	72.37	
70.61		73.59	91.57	103.52	112.32	117.71	119.53	117.71	112.32	103.52	91.57	73.48	
73.22		72.47	90.17	101.94	110.62	115.93	117.71	115.93	110.62	101.94	90.17	72.37	
75.83		69.15	86.04	97.27	105.55	110.62	112.32	110.62	105.55	97.27	86.04	69.05	
78.44		63.73	79.30	89.65	97.27	101.94	103.52	101.94	97.27	89.65	79.30	63.64	
81.05		56.37	70.14	79.30	86.04	90.17	91.57	90.17	86.04	79.30	70.14	56.29	
83.66		47.30	58.86	66.54	72.20	75.67	76.83	75.67	72.20	66.54	58.86	47.23	
86.26		36.79	45.78	51.76	56.16	58.86	59.76	58.86	56.16	51.76	45.78	36.74	
88.87		25.21	31.33	35.40	38.42	40.26	40.88	40.26	38.42	35.40	31.33	25.18	
91.47		13.14	16.12	18.13	19.62	20.54	20.86	20.54	19.62	18.13	16.12	13.13	
94.07		3.04	3.03	3.05	3.03	3.02	3.06	3.02	3.03	3.05	3.03	3.05	
		INCIDENT PLANETARY FLUX (BTU/Hr-SqFt)											
		67.86	67.86	67.86	67.86	67.86	67.86	67.86	67.86	67.86	67.86	67.86	

EARTH END; INCIDENT THERMAL FLUX VS. TIME

SPACE END		INCIDENT SOLAR + ALBEDO (BTU/HR-SqFt)											
TIME (Min)	BETA -52 Deg	BETA -40 Deg	BETA -30 Deg	BETA -20 Deg	BETA -10 Deg	BETA 0 Deg	BETA 10 Deg	BETA 20 Deg	BETA 30 Deg	BETA 40 Deg	BETA 52 Deg		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
10.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
13.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
15.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
18.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
20.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
23.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
26.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
28.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
31.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
33.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
36.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
39.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
41.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
44.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
47.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
49.66	46.40	57.73	65.27	70.82	74.22	75.36	74.22	70.82	65.27	57.73	45.77		
52.28	91.39	113.71	128.55	139.49	146.18	148.44	146.18	139.49	128.55	113.71	91.39		
54.90	133.60	166.23	187.93	203.91	213.70	217.00	213.70	203.91	187.93	166.23	133.60		
57.52	171.75	213.70	241.60	262.15	274.73	278.97	274.73	262.15	241.60	213.70	171.75		
60.14	204.68	254.68	287.92	312.41	327.41	332.46	327.41	312.41	287.92	254.68	204.68		
62.76	231.40	287.92	325.50	353.19	370.14	375.86	370.14	353.19	325.50	287.92	231.40		
65.38	251.08	312.41	353.19	383.23	401.63	407.83	401.63	383.23	353.19	312.41	251.08		
67.99	263.14	327.41	370.14	401.63	420.91	427.41	420.91	401.63	370.14	327.41	263.14		
70.61	267.20	332.46	375.86	407.83	427.41	434.00	427.41	407.83	375.86	332.46	267.20		
73.22	263.14	327.41	370.14	401.63	420.91	427.41	420.91	401.63	370.14	327.41	263.14		
75.83	251.08	312.41	353.19	383.23	401.63	407.83	401.63	383.23	353.19	312.41	251.08		
78.44	231.40	287.92	325.50	353.19	370.14	375.86	370.14	353.19	325.50	287.92	231.40		
81.05	204.68	254.68	287.92	312.41	327.41	332.46	327.41	312.41	287.92	254.68	204.68		
83.66	171.75	213.70	241.60	262.15	274.73	278.97	274.73	262.15	241.60	213.70	171.75		
86.26	133.60	166.23	187.93	203.91	213.70	217.00	213.70	203.91	187.93	166.23	133.60		
88.87	91.39	113.71	128.55	139.49	146.18	148.44	146.18	139.49	128.55	113.71	91.39		
91.47	46.40	57.73	65.27	70.82	74.22	75.36	74.22	70.82	65.27	57.73	46.40		
94.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
INCIDENT PLANETARY FLUX (BTU/HR-SqFt)													
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SPACE END; INCIDENT THERMAL FLUX VS. TIME

**LONG DURATION EXPOSURE FACILITY**

**AVERAGE INCIDENT HEAT FLUX (SOLAR + ALBEDO)  
BTU/HR-SQFT**

LOC	BETA ANGLE										
	-52°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	52°
ROW 1	6.03	7.99	9.37	10.47	23.86	43.76	68.27	98.82	141.04	182.52	234.22
ROW 2	6.38	19.54	35.49	51.88	67.19	83.99	99.09	112.30	125.46	138.73	162.39
ROW 3	53.69	69.99	81.70	91.34	98.79	103.88	106.94	107.54	105.96	102.14	95.95
ROW 4	116.22	115.85	114.58	111.62	106.70	99.38	90.54	79.48	66.76	52.48	33.48
ROW 5	191.95	149.94	127.50	108.49	90.03	71.67	53.83	36.49	20.34	7.96	6.06
ROW 6	245.39	190.93	147.40	103.11	57.70	27.90	11.17	10.37	9.27	7.89	5.90
ROW 7	234.92	183.04	141.58	99.36	68.72	44.11	20.91	10.47	9.37	7.99	6.01
ROW 8	163.42	139.81	126.43	113.22	99.21	84.47	68.62	52.37	35.81	19.79	6.47
ROW 9	96.72	103.04	106.87	108.55	107.89	104.84	99.59	92.07	82.29	70.61	53.92
ROW 10	33.65	51.93	67.30	80.10	91.26	100.32	107.55	112.51	115.39	116.79	116.70
ROW 11	6.08	7.97	20.46	36.77	54.25	72.32	90.71	109.28	128.30	150.81	192.24
ROW 12	5.93	7.89	9.27	10.37	11.17	28.08	58.02	103.40	147.61	191.19	245.15
SPACE	84.82	105.56	119.34	129.49	135.71	137.80	135.71	129.49	119.34	105.56	84.82
EARTH	39.82	42.10	44.28	46.14	47.34	47.79	47.34	46.14	44.28	42.10	39.82

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## APPENDIX B

# ORBITAL INCIDENT HEAT FLUX

## > SOLAR, ALBEDO, & PLANET

**THERMAL FLUX @ 10° YAW (ALL ROWS/ENDS)**

**DAILY AVERAGE**  
(ONE YEAR SEASONAL CYCLE)



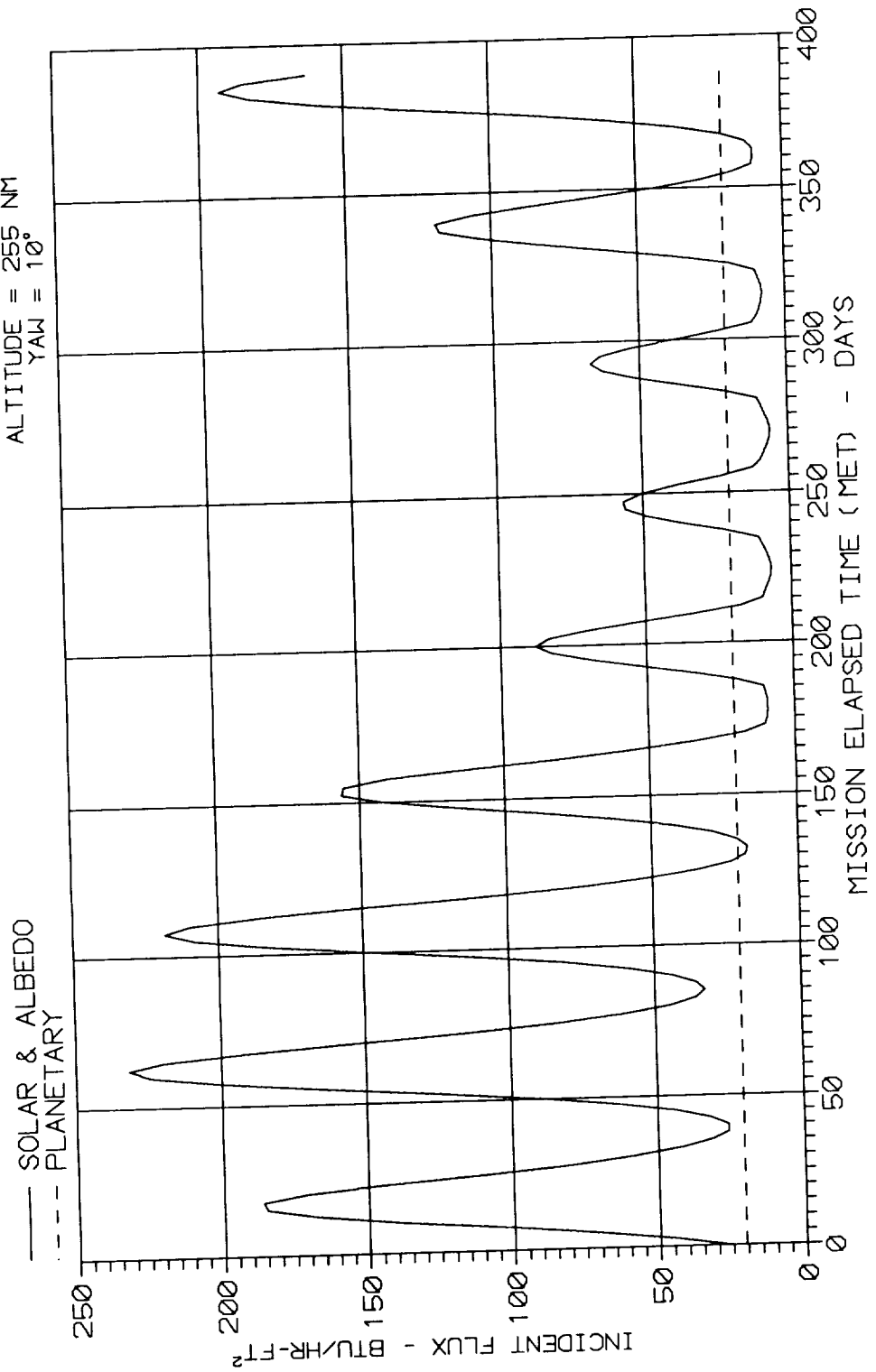
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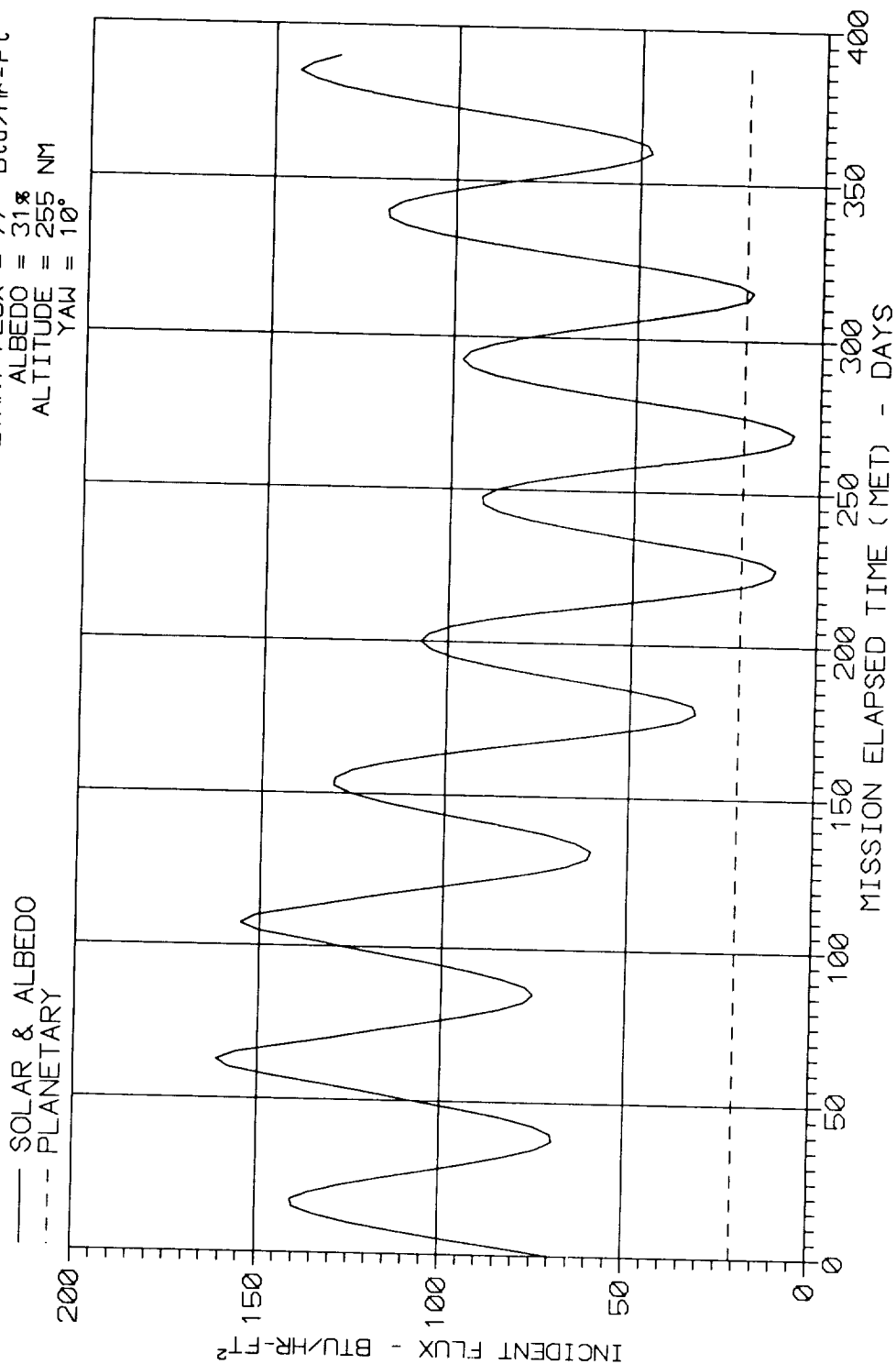
DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 1  
 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434  $\text{Btu/Hr-Ft}^2$   
 PLANETARY FLUX = 77  $\text{Btu/Hr-Ft}^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



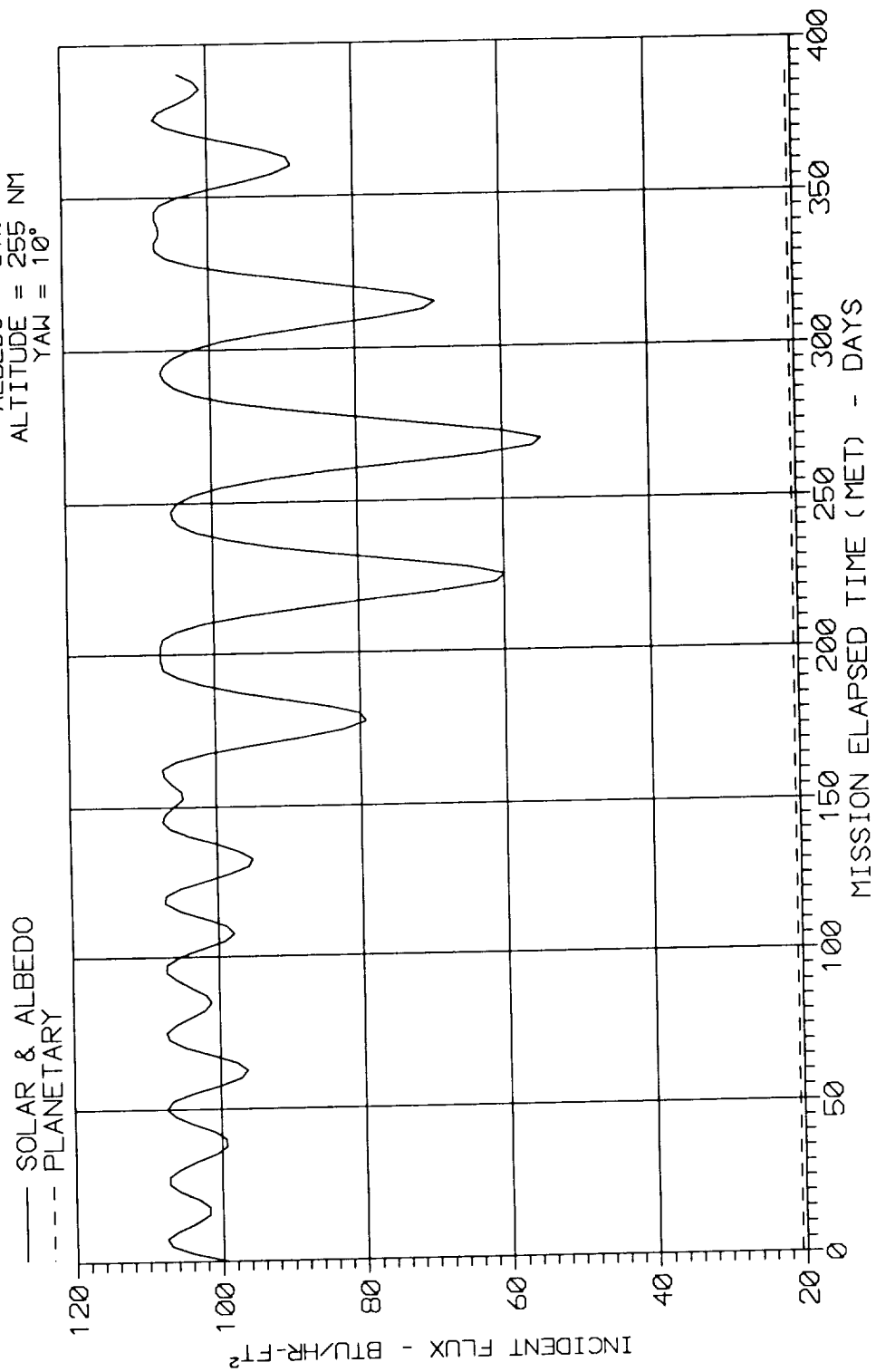
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 2 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



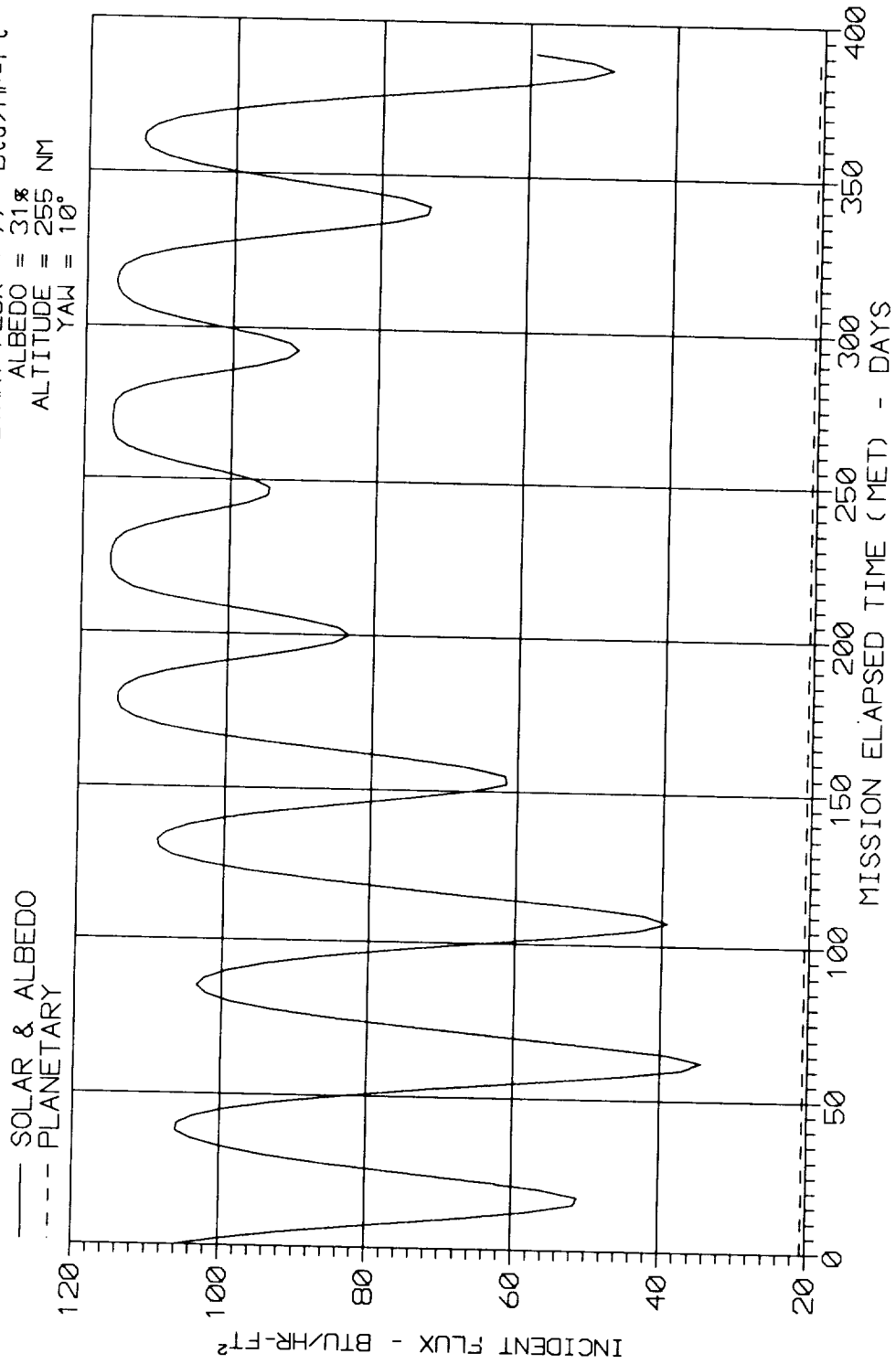
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 3 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



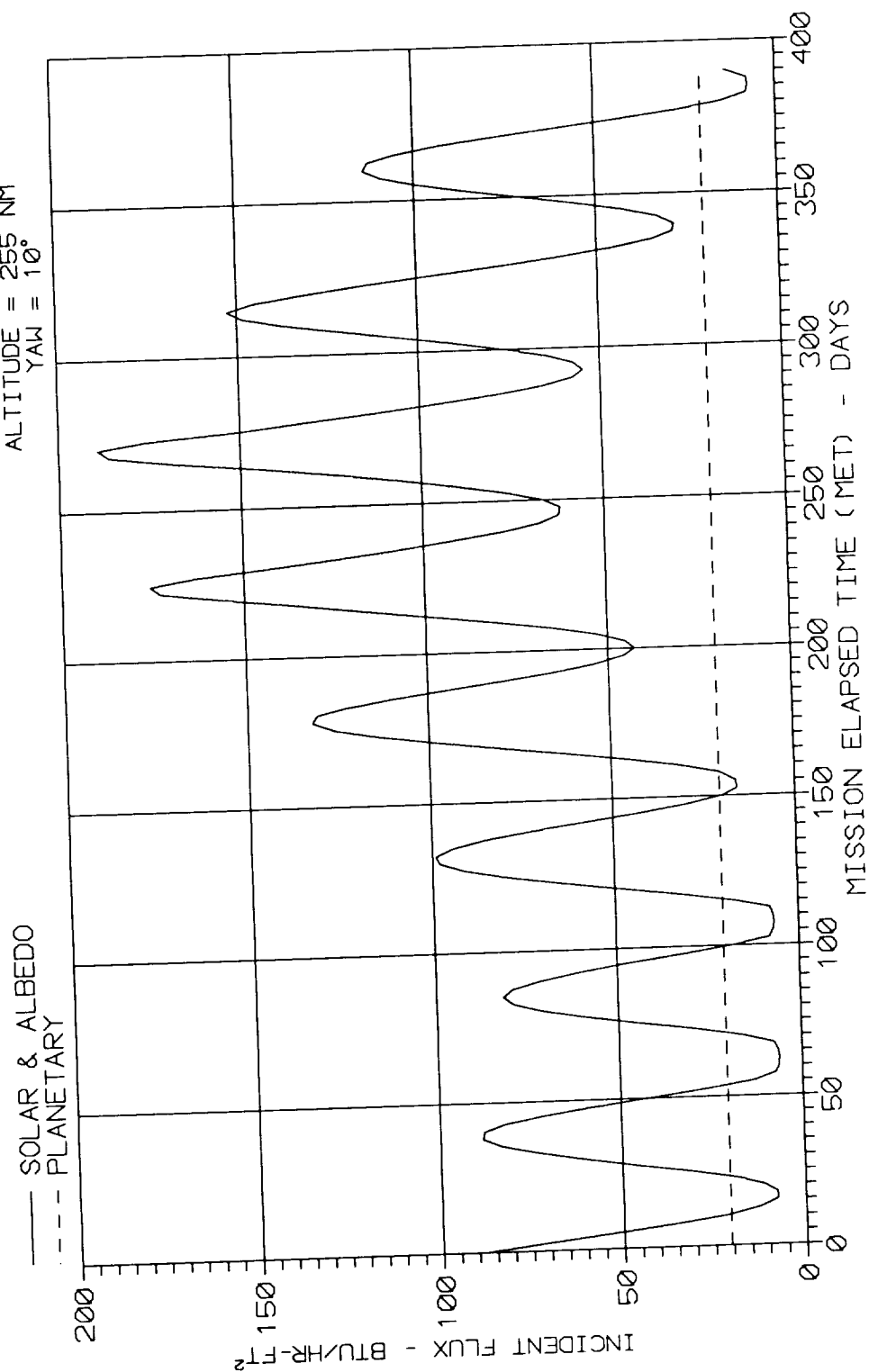
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 4 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°



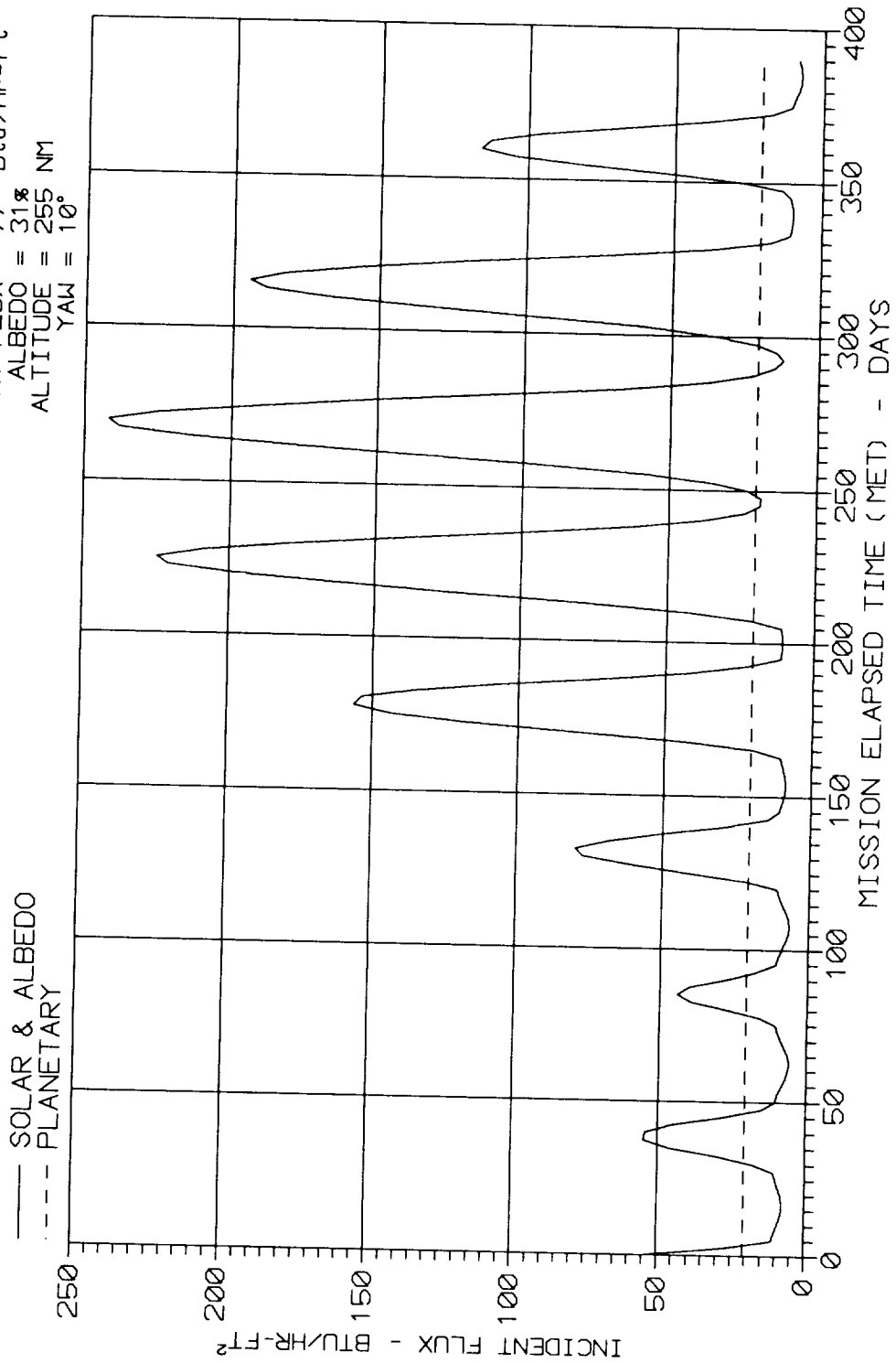
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 5 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT =  $434 \text{ Btu/Hr-Ft}^2$   
 PLANETARY FLUX =  $77 \text{ Btu/Hr-Ft}^2$   
 ALBEDO =  $31\%$   
 ALTITUDE =  $255 \text{ NM}$   
 YAW =  $10^\circ$



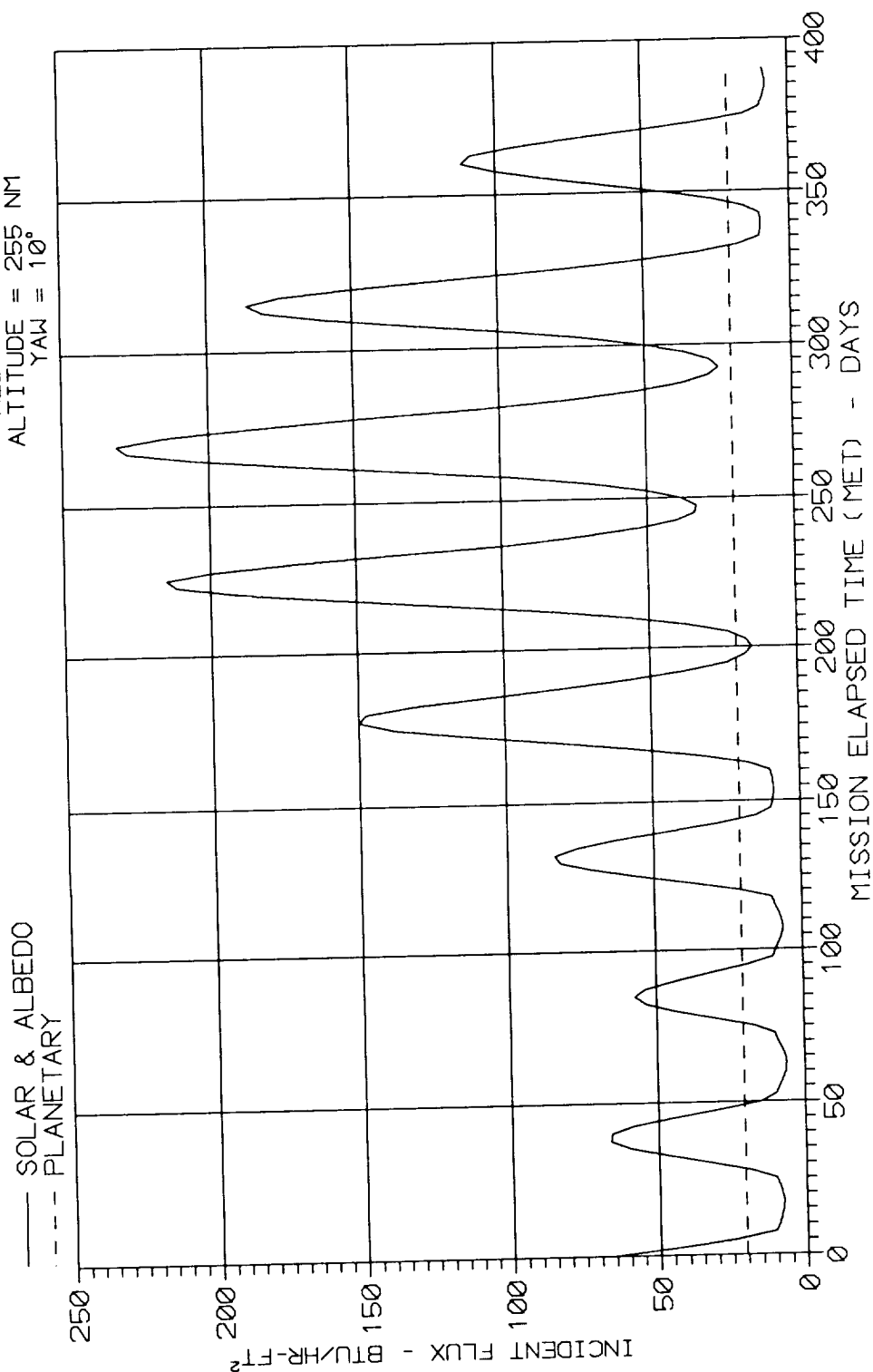
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 6 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°



# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 7 APRIL 7, 1984 - MAY 13, 1985

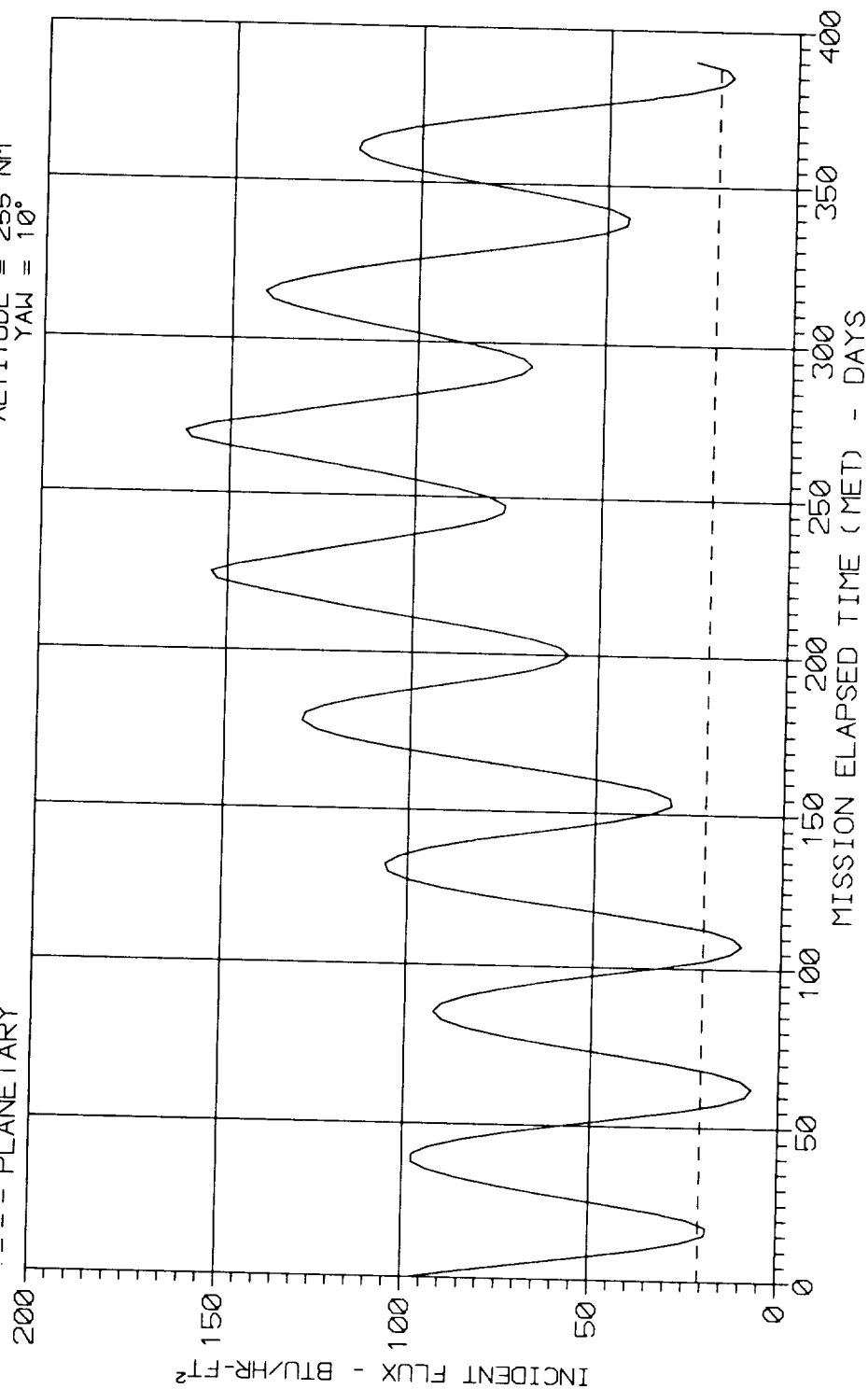
SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 8 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr- $F_t^2$   
 PLANETARY FLUX = 77 Btu/Hr- $F_t^2$   
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

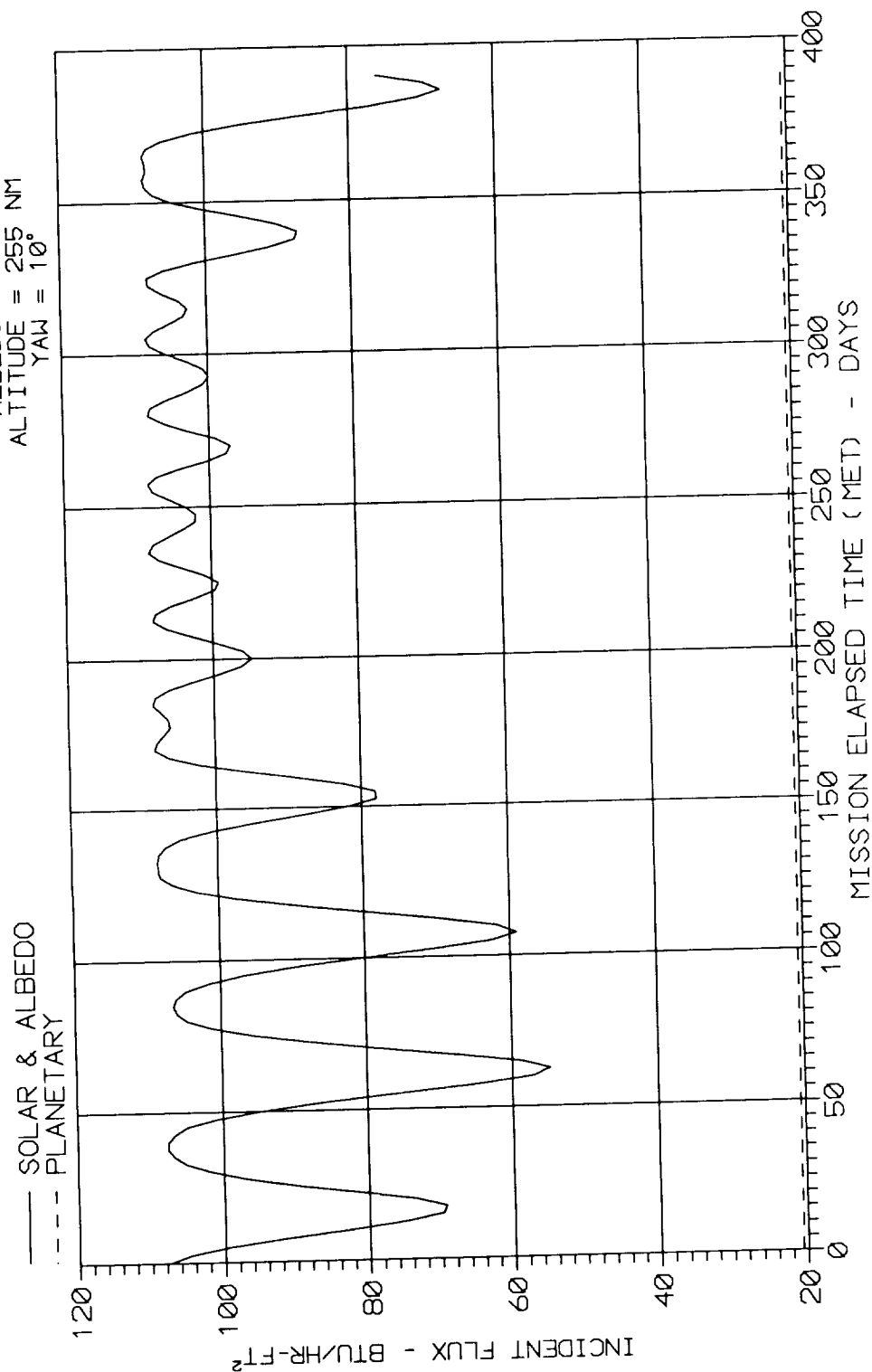
— SOLAR & ALBEDO  
 --- PLANETARY





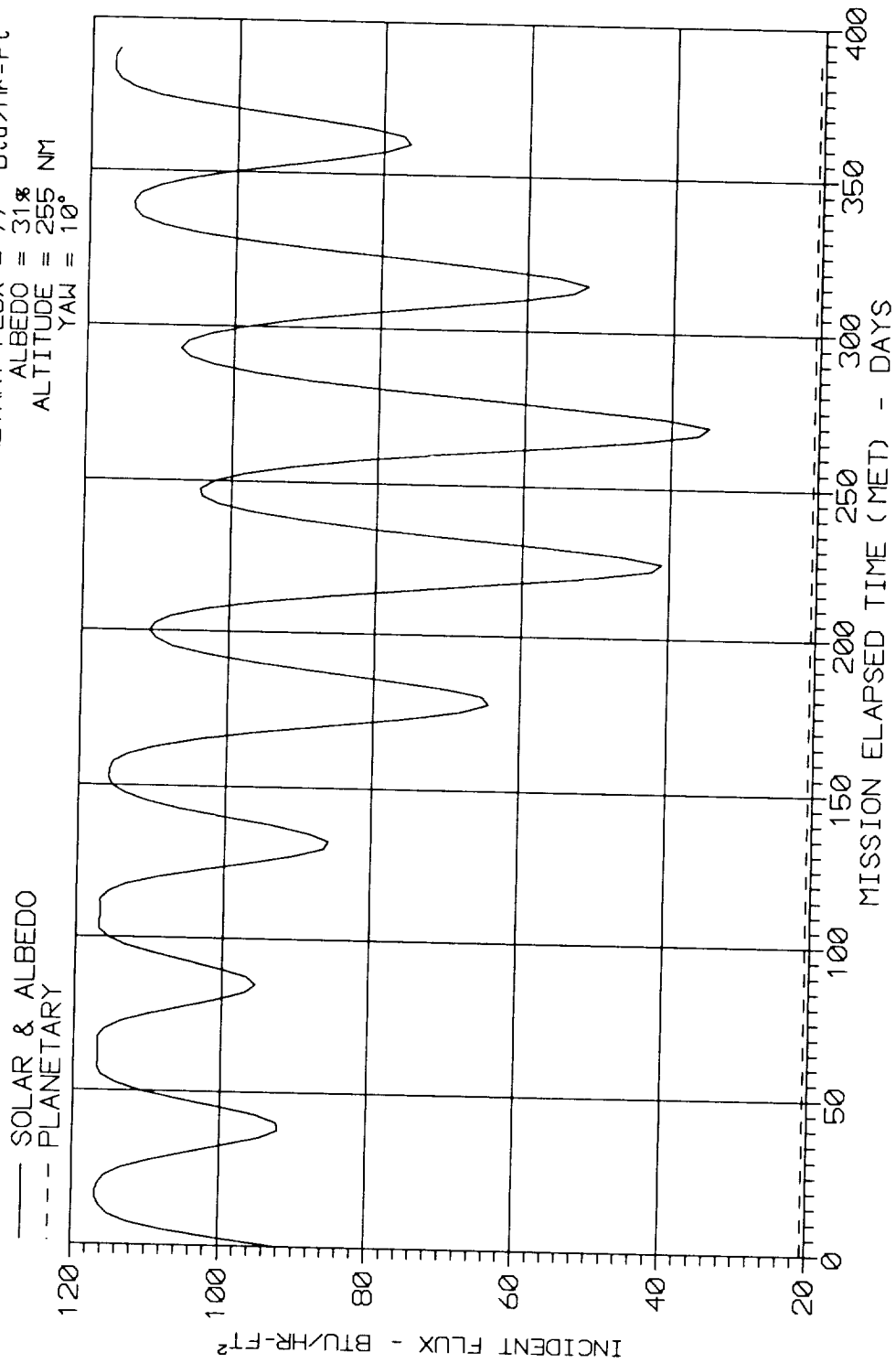
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 9 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



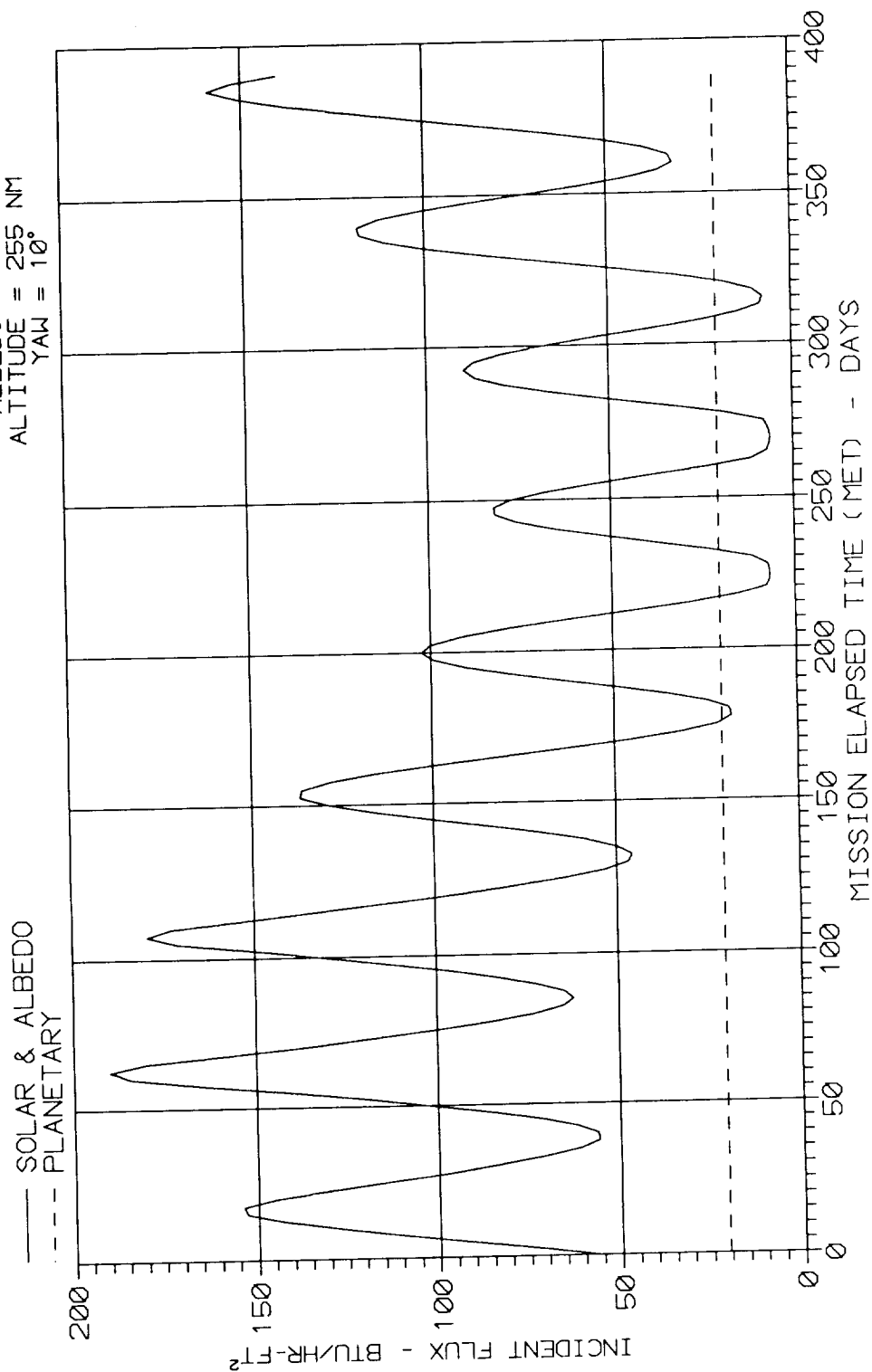
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 10 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



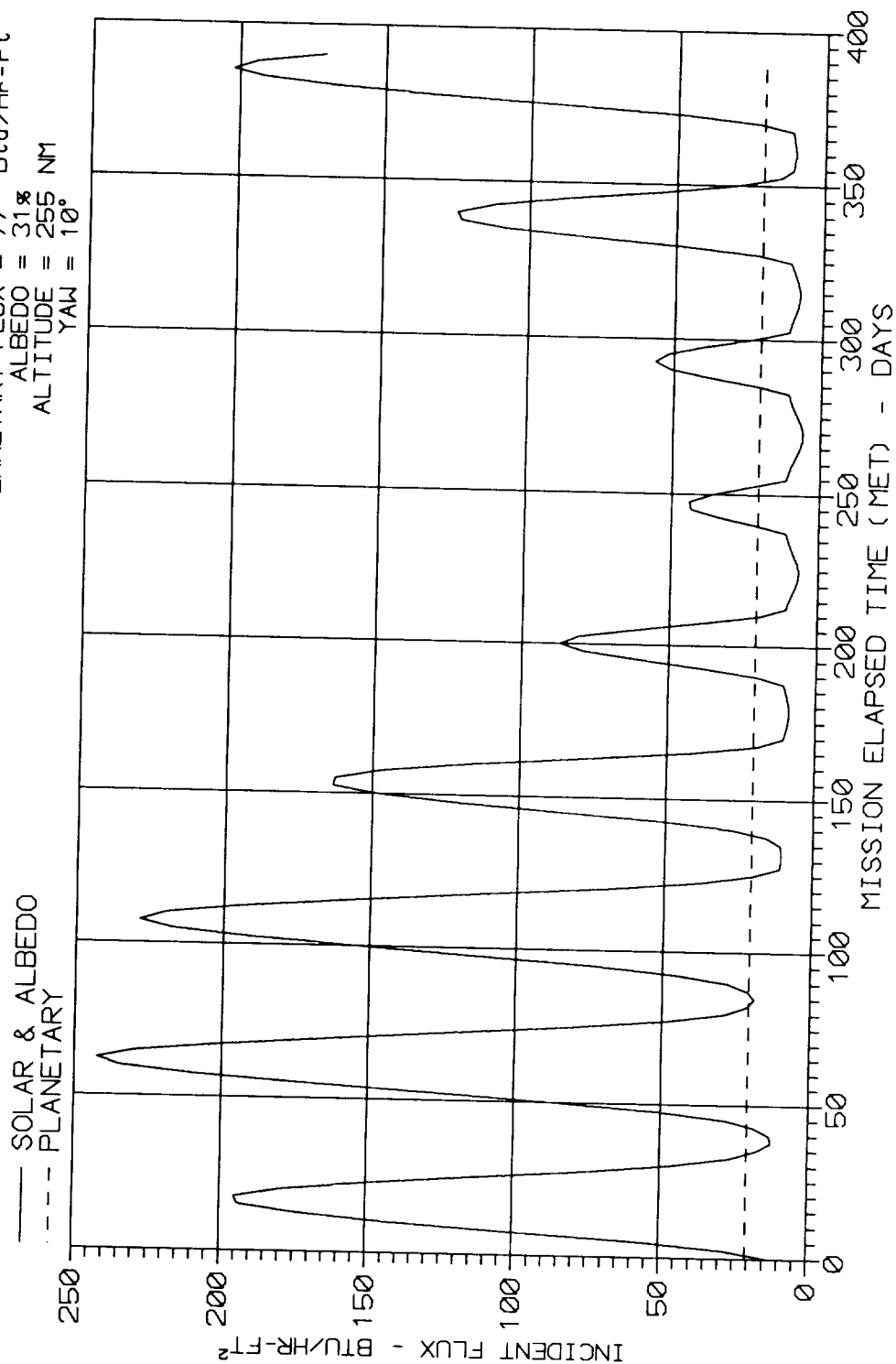
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 11 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



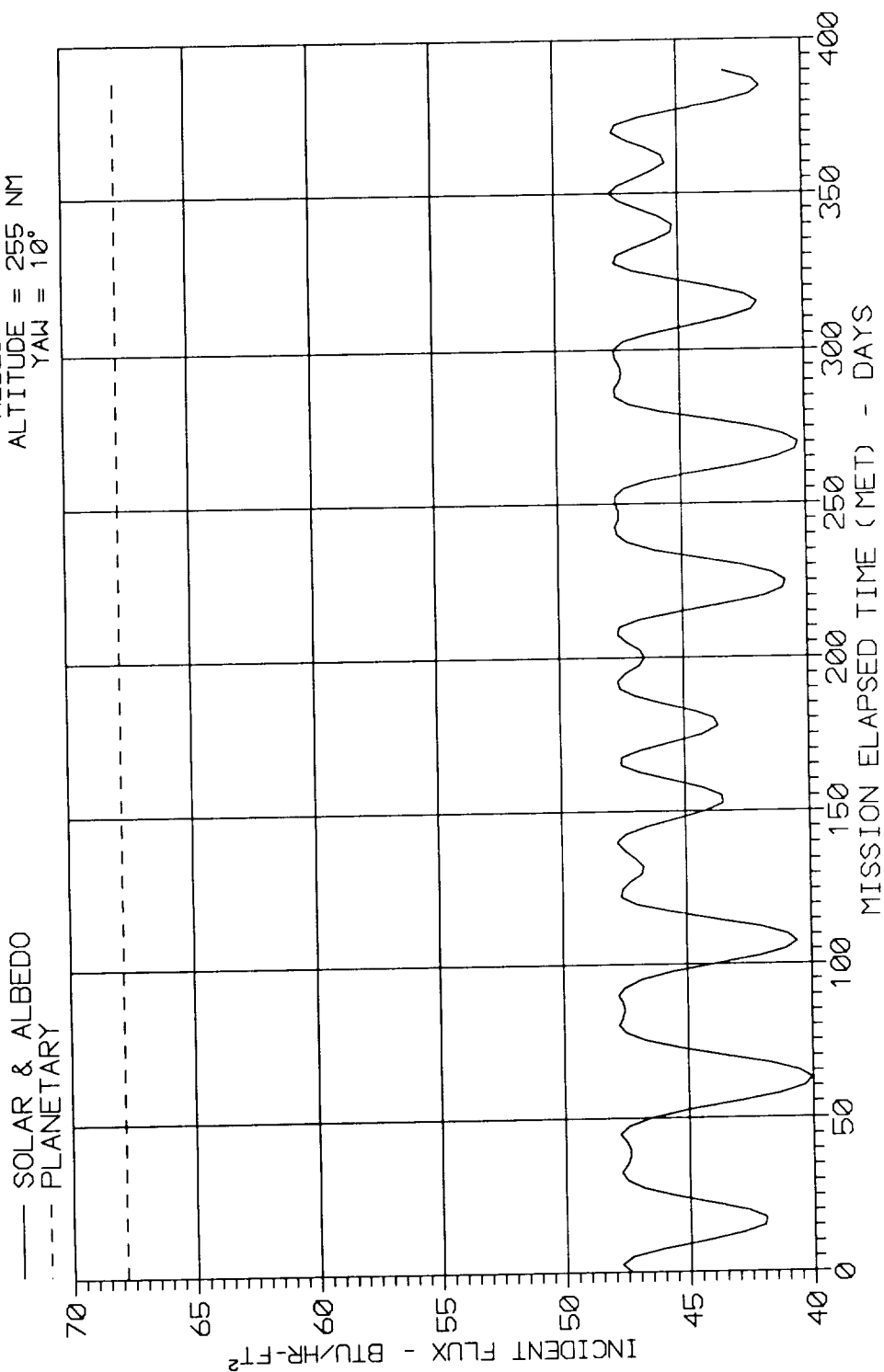
# DAILY TIME AVERAGED ORBITAL HEAT FLUX; ROW 12 APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



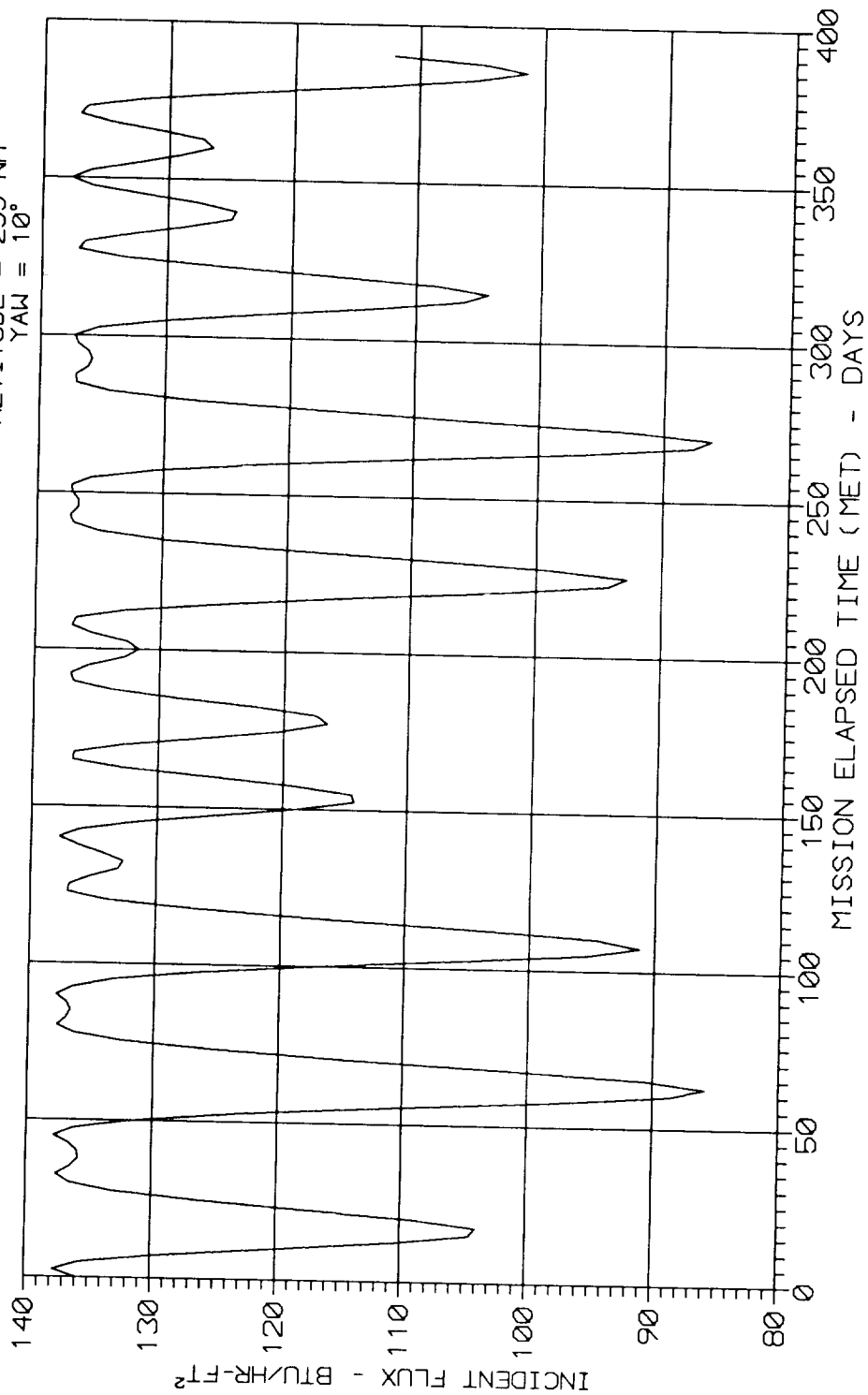
# DAILY TIME AVERAGED ORBITAL HEAT FLUX: EARTH END APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = 77 Btu/Hr-Ft<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# DAILY TIME AVERAGED ORBITAL HEAT FLUX; SPACE END APRIL 7, 1984 - MAY 13, 1985

SOLAR CONSTANT = 434 Btu/Hr-Ft<sup>2</sup>  
 PLANETARY FLUX = N/A  
 ALBEDO = N/A  
 ALTITUDE = 255 NM  
 YAW = 10°



TIME Days	BETA ANGLE	EARTH SPACE													
		ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	END	END
0	-9.07	25.71	69.43	99.26	106.02	88.32	54.94	66.43	97.82	107.59	92.11	55.93	12.74	47.38	135.90
1	-5.51	32.81	74.94	101.08	103.41	81.78	44.32	57.66	92.51	106.51	95.34	62.37	18.77	47.54	136.65
2	-1.78	40.23	80.71	102.97	100.68	74.93	33.21	48.49	86.96	105.38	98.72	69.11	25.07	47.71	137.43
3	2.12	48.96	86.62	104.53	97.51	67.89	24.36	39.84	80.98	103.73	101.86	76.22	34.43	47.69	137.36
4	6.08	58.67	92.53	105.74	94.01	60.82	17.73	31.88	74.76	101.65	104.73	83.50	46.28	47.52	136.53
5	10.12	68.64	98.55	106.95	90.41	53.62	11.16	23.83	68.41	99.50	107.62	90.93	58.57	47.33	135.64
6	14.12	80.86	104.12	107.20	85.98	46.69	10.84	18.42	61.92	96.49	109.60	98.36	76.72	46.85	133.15
7	18.11	93.04	109.67	107.46	81.57	39.77	10.52	13.03	55.44	93.49	111.58	105.77	94.82	46.37	130.67
8	21.96	107.08	114.87	107.26	76.99	33.34	10.15	10.25	49.13	90.16	113.08	113.00	112.05	45.78	127.50
9	25.67	122.75	119.76	106.66	72.27	27.36	9.75	9.85	42.98	86.52	114.15	120.06	128.46	45.09	123.74
10	29.13	137.37	124.31	106.10	67.87	21.79	9.37	9.47	37.25	83.13	115.14	126.64	143.76	44.44	120.22
11	32.30	150.58	128.51	105.08	63.47	17.53	8.95	9.05	32.12	79.60	115.71	133.51	157.64	43.78	116.17
12	35.12	162.30	132.25	104.00	59.44	14.02	8.56	8.67	27.60	76.30	116.11	139.90	169.95	43.16	112.28
13	37.47	172.05	135.37	103.10	56.09	11.10	8.24	8.35	23.84	73.56	116.44	145.22	180.19	42.64	109.04
14	39.33	179.74	137.83	102.40	53.44	8.79	7.98	8.09	20.87	71.39	116.71	149.41	188.27	42.24	106.49
15	40.58	185.02	139.86	101.84	51.57	7.87	7.79	7.90	19.15	69.81	116.80	152.92	193.80	41.99	104.56
16	41.20	187.69	141.08	101.52	50.58	7.77	7.70	7.80	18.45	68.94	116.79	155.06	196.59	41.87	103.49
17	41.16	187.52	141.01	101.54	50.65	7.78	7.81	7.92	18.50	69.00	116.80	154.92	196.41	41.88	103.56
18	40.47	184.56	139.65	101.90	51.73	7.89	7.81	7.92	19.26	69.95	116.80	152.55	193.32	42.00	104.74
19	39.19	179.17	137.65	102.45	53.64	8.97	8.00	8.11	21.09	71.55	116.69	149.10	187.67	42.27	106.68
20	37.34	171.51	135.20	103.15	56.27	11.26	8.26	8.36	24.04	73.71	116.43	144.92	179.63	42.67	109.22
21	35.05	161.99	132.16	104.03	59.55	14.11	8.57	8.68	27.72	76.39	116.10	139.73	169.62	43.17	112.38
22	32.34	150.77	128.57	105.06	63.41	17.48	8.95	9.05	32.05	79.54	115.72	133.61	157.83	43.77	116.11
23	29.37	138.38	124.63	106.06	67.56	21.40	9.34	9.44	36.85	82.90	115.21	127.10	144.83	44.40	119.98
24	26.14	124.75	120.38	106.59	71.67	26.60	9.69	9.79	42.20	86.06	114.28	120.96	130.55	45.00	123.26
25	22.79	110.59	115.97	107.13	75.93	32.00	10.06	10.16	47.75	89.34	113.32	114.58	115.73	45.62	126.66
26	19.32	96.75	111.35	107.54	80.23	37.67	10.42	11.39	53.47	92.58	112.18	108.02	100.33	46.22	129.91
27	15.85	86.13	106.52	107.31	84.07	43.69	10.70	16.08	59.11	95.19	110.46	101.57	84.56	46.64	132.07
28	12.46	75.78	101.80	107.10	87.82	49.57	10.97	20.67	64.62	97.74	108.78	95.27	69.17	47.05	134.18
29	9.57	67.21	97.74	106.81	90.92	54.60	11.89	24.86	69.29	99.82	107.25	89.92	56.73	47.36	135.80
30	6.25	59.07	92.78	105.79	93.86	60.53	17.46	31.54	74.50	101.56	104.85	83.81	46.78	47.51	136.49
31	3.21	51.62	88.24	104.86	96.55	65.95	22.54	37.66	79.28	103.16	102.65	78.22	37.68	47.65	137.13
32	0.38	44.69	84.02	103.99	99.05	71.00	27.28	43.35	83.72	104.64	100.60	73.01	29.21	47.77	137.72
33	-2.17	39.45	80.10	102.78	100.97	75.66	34.38	49.45	87.54	105.50	98.36	68.40	24.41	47.69	137.35
34	-4.40	35.00	76.65	101.64	102.60	79.76	41.04	54.95	90.87	106.17	96.34	64.36	20.63	47.59	136.88
35	-6.25	31.32	73.79	100.70	103.96	83.15	46.54	59.49	93.62	106.73	94.67	61.02	17.51	47.51	136.49
36	-7.70	28.44	71.55	99.96	105.01	85.80	50.85	63.05	95.77	107.17	93.36	58.41	15.06	47.44	136.19
37	-8.70	26.45	70.00	99.45	105.75	87.64	53.83	65.51	97.26	107.48	92.45	56.60	13.37	47.40	135.98
38	-9.25	25.36	69.16	99.17	106.15	88.64	55.46	66.86	98.08	107.64	91.95	55.61	12.45	47.37	135.87
39	-9.30	25.25	69.07	99.15	106.19	88.74	55.62	67.00	98.16	107.66	91.90	55.52	12.35	47.37	135.86
40	-8.87	26.11	69.73	99.36	105.87	87.96	54.35	65.94	97.52	107.53	92.29	56.29	13.08	47.39	135.95
41	-7.96	27.91	71.14	99.83	105.21	86.29	51.64	63.71	96.17	107.25	93.11	57.93	14.61	47.43	136.14
42	-6.60	30.63	73.25	100.52	104.21	83.79	47.58	60.35	94.14	106.84	94.35	60.39	16.92	47.49	136.42

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85

TIME Days	BETA ANGLE	ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	EARTH SPACE END
43	-4.80	34.21	76.03	101.44	102.90	80.49	42.22	55.93	91.46	106.30	95.98	63.64	19.96	47.57
44	-2.61	38.58	79.43	102.55	101.29	76.46	35.68	50.52	88.19	105.63	97.97	67.61	23.67	47.67
45	-0.05	43.67	83.38	103.85	99.42	71.76	28.06	44.23	84.39	104.86	100.28	72.23	27.99	47.79
46	2.83	50.71	87.68	104.75	96.88	66.62	23.17	38.41	79.87	103.35	102.38	77.53	36.56	47.66
47	5.99	58.45	92.40	105.71	94.08	60.98	17.88	32.06	74.91	101.70	104.66	83.34	46.01	47.52
48	9.39	66.76	97.46	106.75	91.08	54.93	12.20	25.23	69.57	99.91	107.12	89.58	56.18	47.37
49	12.96	77.32	102.50	107.13	87.26	48.69	10.93	19.98	63.80	97.36	109.03	96.21	71.47	46.98
50	16.69	88.72	107.70	107.37	83.14	42.22	10.63	14.94	57.74	94.56	110.88	103.14	88.40	46.54
51	20.51	100.99	112.98	107.50	78.83	35.66	10.31	10.41	51.52	91.57	112.67	110.26	105.68	46.04
52	24.40	117.39	118.09	106.87	73.89	29.41	9.89	9.99	45.09	87.76	113.78	117.65	122.85	45.32
53	28.27	133.74	123.18	106.24	68.96	23.18	9.46	9.56	38.68	83.97	114.89	125.01	139.96	44.60
54	32.10	149.77	128.25	105.16	63.76	17.77	8.98	9.08	32.44	79.82	115.69	133.06	156.78	43.82
55	35.81	165.16	133.17	103.74	58.46	13.16	8.47	8.57	26.50	75.50	116.21	141.46	172.95	43.01
56	39.34	179.79	137.84	102.39	53.42	8.78	7.98	8.09	20.85	71.38	116.71	149.44	188.32	42.23
57	42.59	193.71	143.84	100.80	48.37	7.55	7.46	7.57	16.90	67.00	116.78	159.86	202.86	41.62
58	45.48	206.15	149.54	99.31	43.80	7.09	6.99	7.09	13.68	62.98	116.76	169.81	215.85	41.09
59	47.92	216.66	154.35	98.05	39.93	6.71	6.58	6.69	10.96	59.59	116.74	178.21	226.82	40.65
60	49.70	224.33	157.86	97.13	37.12	6.42	6.29	6.39	8.97	57.11	116.73	184.34	234.83	40.33
61	50.84	229.20	160.09	96.54	35.32	6.24	6.10	6.20	7.71	55.54	116.72	186.16	239.91	40.12
62	51.40	231.63	161.20	96.25	34.43	6.16	6.01	6.11	7.08	54.76	116.71	190.17	242.44	40.02
63	51.19	230.74	160.79	96.36	34.76	6.19	6.04	6.14	7.31	55.04	116.72	189.46	241.51	40.06
64	50.23	226.62	158.91	96.85	36.28	6.34	6.20	6.30	8.38	56.38	116.72	186.16	237.21	40.23
65	48.58	219.51	155.65	97.70	38.89	6.60	6.47	6.58	10.22	58.67	116.74	180.48	229.79	40.53
66	46.36	209.93	151.27	98.85	42.41	6.95	6.84	6.95	12.70	61.76	116.75	172.83	219.80	40.93
67	43.63	198.15	145.87	100.27	46.74	7.39	7.29	7.40	15.75	65.57	116.77	163.41	207.50	41.43
68	40.54	184.87	139.79	101.86	51.62	7.87	7.80	7.91	19.19	69.86	116.80	152.80	193.64	41.99
69	37.14	170.67	134.93	103.23	56.56	11.51	8.28	8.39	24.37	73.95	116.40	144.46	178.74	42.72
70	33.59	155.94	130.22	104.59	61.63	15.93	8.77	8.88	30.06	78.09	115.90	136.43	163.26	43.49
71	29.91	140.66	125.34	105.97	66.87	20.53	9.28	9.38	35.96	82.37	115.36	128.13	147.22	44.30
72	26.15	124.80	120.40	106.58	71.65	26.58	9.69	9.79	42.18	86.05	114.29	120.98	130.61	45.00
73	22.43	109.10	115.50	107.19	76.38	32.57	10.10	10.20	48.34	89.69	113.22	113.91	114.17	45.69
74	18.73	94.93	110.53	107.50	80.89	38.70	10.47	12.19	54.44	93.03	111.89	106.91	97.63	46.29
75	15.17	84.06	105.57	107.27	84.82	44.87	10.76	17.00	60.22	95.70	110.12	100.31	81.48	46.72
76	11.72	73.53	100.78	107.05	88.64	50.84	11.03	21.66	65.81	98.29	108.41	93.91	65.84	47.13
77	8.51	64.61	96.15	106.48	91.86	56.50	13.67	27.00	70.96	100.37	106.48	87.96	53.55	47.41
78	5.51	57.26	91.68	105.57	94.51	61.85	18.69	33.03	75.66	101.95	104.31	82.45	44.57	47.54
79	2.81	50.66	87.65	104.74	96.90	66.66	23.20	38.45	79.90	103.36	102.36	77.49	36.50	47.66
80	0.41	44.78	84.07	104.01	99.02	70.94	27.22	43.28	83.67	104.62	100.63	73.08	29.31	47.77
81	-1.60	40.58	80.98	103.07	100.55	74.61	32.68	48.05	86.69	105.32	98.88	69.43	25.37	47.72
82	-3.23	37.34	78.46	102.24	101.74	77.60	37.53	52.06	89.12	105.82	97.40	66.48	22.62	47.64
83	-4.41	34.99	76.64	101.64	102.61	79.77	41.05	54.96	90.88	106.18	96.34	64.35	20.62	47.59
84	-5.16	33.50	75.48	101.25	103.16	81.15	43.29	56.81	91.99	106.40	95.65	62.99	19.35	47.56
85	-5.43	32.96	75.06	101.12	103.35	81.64	44.09	57.47	92.40	106.49	95.41	62.51	18.90	47.55

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85



TIME Days	BETA ANGLE	EARTH SPACE													
		ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	END	END
86	-5.24	33.35	75.36	101.21	103.21	81.28	43.51	57.00	92.11	106.43	95.59	62.86	19.23	47.55	136.71
87	-4.57	34.67	76.39	101.55	102.73	80.06	41.53	55.36	91.12	106.23	96.19	64.06	20.35	47.58	136.84
88	-3.46	36.88	78.11	102.12	101.91	78.02	38.22	52.62	89.46	105.89	97.20	66.07	22.23	47.63	137.08
89	-1.92	39.95	80.49	102.90	100.78	75.19	33.63	48.83	87.17	105.42	98.59	68.85	24.84	47.70	137.40
90	0.03	43.85	83.51	103.89	99.35	71.61	27.85	44.04	84.26	104.82	100.35	72.38	28.18	47.79	137.79
91	2.30	49.41	86.90	104.58	97.34	67.56	24.06	39.48	80.70	103.63	101.99	76.55	34.97	47.69	137.32
92	4.66	55.18	90.41	105.31	95.26	63.36	20.11	34.74	77.00	102.39	103.70	80.89	42.03	47.58	136.83
93	7.48	62.09	94.62	106.17	92.77	58.33	15.39	29.06	72.57	100.91	105.74	86.07	50.47	47.45	136.24
94	10.61	70.14	99.23	106.98	89.86	52.77	11.12	23.16	67.61	99.13	107.86	91.85	60.81	47.27	135.33
95	13.91	80.21	103.82	107.19	86.22	47.05	10.86	18.70	62.26	96.65	109.50	97.97	75.77	46.87	133.28
96	17.39	90.84	108.66	107.41	82.37	41.02	10.58	14.00	56.61	94.03	111.22	104.43	91.55	46.45	131.11
97	20.94	102.78	113.53	107.43	78.29	34.98	10.27	10.37	50.82	91.15	112.79	111.06	107.55	45.97	128.54
98	24.57	118.10	118.31	106.84	73.67	29.14	9.87	9.97	44.81	87.60	113.83	117.97	123.59	45.29	124.86
99	28.17	133.30	123.05	106.26	69.09	23.34	9.47	9.57	38.85	84.08	114.86	124.81	139.50	44.62	121.20
100	31.73	148.20	127.75	105.30	64.29	18.24	9.03	9.13	33.04	80.26	115.63	132.21	155.14	43.90	116.96
101	35.13	162.32	132.26	104.00	59.44	14.02	8.56	8.67	27.60	76.30	116.11	139.90	169.96	43.16	112.27
102	38.36	175.72	136.54	102.77	54.82	10.00	8.12	8.22	22.42	72.53	116.57	147.21	184.04	42.45	107.82
103	41.27	187.99	141.22	101.49	50.47	7.76	7.68	7.79	18.38	68.85	116.79	155.29	196.89	41.86	103.37
104	43.82	198.97	146.25	100.17	46.44	7.36	7.26	7.37	15.54	65.30	116.77	164.07	208.35	41.40	98.97
105	45.87	207.81	150.30	99.11	43.19	7.03	6.92	7.03	13.25	62.45	116.76	171.13	217.58	41.02	95.42
106	47.35	214.20	153.22	98.34	40.84	6.80	6.68	6.78	11.59	60.38	116.74	176.24	224.25	40.75	92.85
107	48.17	217.72	154.84	97.92	39.54	6.67	6.54	6.65	10.68	59.25	116.74	179.06	227.93	40.61	91.44
108	48.28	218.19	155.05	97.86	39.37	6.65	6.52	6.63	10.56	59.10	116.74	179.43	228.41	40.59	91.25
109	47.66	215.53	153.83	98.18	40.35	6.75	6.63	6.73	11.25	59.95	116.75	177.31	225.65	40.70	92.32
110	46.33	209.80	151.21	98.87	42.46	6.96	6.85	6.95	12.73	61.80	116.77	172.72	219.66	40.94	94.62
111	44.40	201.48	147.40	99.87	45.51	7.26	7.16	7.27	14.88	64.49	116.77	166.08	210.98	41.29	97.95
112	41.89	190.68	142.45	101.16	49.48	7.66	7.58	7.69	17.68	67.98	116.79	157.45	199.71	41.75	102.29
113	38.97	178.28	137.36	102.53	53.94	9.23	8.03	8.14	21.43	71.81	116.66	148.61	186.73	42.31	106.97
114	35.67	164.55	132.97	103.80	58.67	13.35	8.49	8.59	26.73	75.67	116.19	141.12	172.31	43.04	111.53
115	32.12	149.82	128.27	105.15	63.74	17.76	8.98	9.08	32.42	79.81	115.69	133.09	156.84	43.82	116.42
116	28.35	134.05	123.28	106.23	68.86	23.05	9.45	9.55	38.55	83.90	114.92	125.15	140.30	44.59	121.02
117	24.49	117.78	118.21	106.85	73.77	29.26	9.88	9.98	44.93	87.67	113.81	117.82	123.25	45.30	124.93
118	20.57	101.21	113.05	107.49	78.76	35.58	10.31	10.41	51.43	91.51	112.68	110.36	105.92	46.03	128.91
119	16.59	88.39	107.55	107.36	83.26	42.41	10.64	10.64	57.91	94.64	110.83	102.94	87.91	46.55	131.61
120	12.69	76.48	102.12	107.11	87.57	49.17	10.95	20.35	64.24	97.57	108.89	95.70	70.22	47.02	134.04
121	8.84	65.43	96.65	106.58	91.57	55.90	13.11	26.32	70.43	100.20	106.72	88.58	54.55	47.39	135.95
122	5.12	56.32	91.10	105.45	94.85	62.54	19.34	33.81	76.27	102.15	104.03	81.74	43.41	47.56	136.73
123	2.03	48.74	86.48	104.50	97.59	68.05	24.52	40.03	81.13	103.78	101.80	76.05	34.15	47.70	137.38
124	-1.37	41.04	81.34	103.18	100.38	74.18	31.99	47.48	86.35	105.25	99.09	69.85	25.76	47.73	137.51
125	-4.45	34.92	76.58	101.62	102.63	79.83	41.16	55.05	90.93	106.19	96.30	64.29	20.56	47.59	136.87
126	-7.20	29.43	72.31	100.21	104.65	84.90	49.38	61.84	95.04	107.02	93.80	59.30	15.90	47.47	136.29
127	-9.62	24.62	68.58	98.98	106.42	89.33	56.58	67.79	98.63	107.75	91.61	54.94	11.81	47.36	135.79
128	-11.62	21.69	65.38	97.58	107.50	93.02	65.07	73.68	101.47	107.98	89.46	51.42	11.04	47.14	134.70

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85

TIME Days	BETA ANGLE	ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	EARTH SPACE END
129	-13.21	19.57	62.82	96.40	108.28	95.95	72.27	78.55	103.70	108.09	87.69	48.64	10.91	46.94
130	-14.31	18.09	61.05	95.58	108.82	97.98	77.26	81.91	105.24	108.16	86.46	46.72	10.83	46.80
131	-14.92	17.28	60.07	95.13	109.12	99.11	80.04	83.79	106.09	108.20	85.78	45.65	10.78	46.73
132	-15.03	17.13	59.89	95.05	109.17	99.31	80.53	84.12	106.25	108.21	85.66	45.47	10.77	46.71
133	-14.64	17.65	60.52	95.34	108.98	98.59	78.76	82.92	105.70	108.19	86.09	46.15	10.80	46.76
134	-13.76	18.82	61.93	95.99	108.55	96.97	74.79	80.24	104.47	108.13	87.07	47.68	10.87	46.87
135	-12.41	20.63	64.11	96.99	107.89	94.48	68.66	76.11	102.58	108.03	88.58	50.04	10.98	47.04
136	-10.65	23.00	66.95	98.31	107.02	91.22	60.64	70.70	100.10	107.91	90.55	53.12	11.12	47.26
137	-8.49	26.86	70.32	99.56	105.60	87.26	53.22	65.01	96.95	107.41	92.64	56.98	13.72	47.41
138	-6.01	31.81	74.16	100.82	103.78	82.70	45.82	58.90	93.26	106.66	94.89	61.46	17.92	47.52
139	-3.23	37.33	78.46	102.23	101.75	77.61	37.54	52.07	89.12	105.82	97.40	66.48	22.61	47.64
140	-0.24	43.29	83.09	103.76	99.56	72.11	28.63	44.70	84.67	104.91	100.11	71.88	27.67	47.78
141	2.95	51.00	87.86	104.78	96.77	66.41	22.97	38.18	79.68	103.29	102.46	77.74	36.91	47.66
142	6.25	59.09	92.79	105.79	93.85	60.51	17.44	31.53	74.49	101.56	104.85	83.82	46.80	47.51
143	9.63	67.37	97.83	106.83	90.86	54.49	11.79	24.73	69.19	99.78	107.29	90.03	56.92	47.36
144	13.02	77.48	102.58	107.13	87.20	48.60	10.93	19.91	63.71	97.32	109.06	96.31	71.71	46.98
145	16.37	87.74	107.25	107.35	83.49	42.78	10.66	15.37	58.26	94.80	110.72	102.54	86.95	46.58
146	19.61	97.63	111.76	107.55	79.91	37.17	10.40	11.00	53.00	92.36	112.33	108.55	101.64	46.19
147	22.70	110.24	115.86	107.14	76.04	32.14	10.07	10.17	47.89	89.42	113.30	114.42	115.36	45.64
148	25.55	122.27	119.61	106.68	72.42	27.55	9.76	9.86	43.17	86.63	114.11	119.84	127.96	45.11
149	28.11	133.05	122.97	106.27	69.17	23.44	9.48	9.58	38.94	84.13	114.85	124.70	139.24	44.63
150	30.28	142.20	125.83	105.85	66.36	20.04	9.23	9.33	35.36	81.95	115.43	128.93	148.83	44.22
151	32.02	149.41	128.14	105.19	63.88	17.88	8.99	9.09	32.58	79.92	115.67	132.87	156.41	43.84
152	33.25	154.53	129.77	104.72	62.12	16.35	8.82	8.92	30.60	78.49	115.85	135.66	161.78	43.57
153	33.89	157.16	130.61	104.48	61.21	15.56	8.73	8.84	29.58	77.75	115.94	137.09	164.55	43.43
154	33.97	157.52	130.73	104.44	61.09	15.45	8.72	8.83	29.45	77.65	115.95	137.29	164.92	43.41
155	33.54	155.72	130.15	104.61	61.71	15.99	8.78	8.89	30.14	78.15	115.89	136.31	163.03	43.51
156	32.49	151.37	128.76	105.01	63.20	17.30	8.93	9.03	31.82	79.37	115.74	133.93	158.46	43.73
157	30.90	144.77	126.65	105.62	65.48	19.27	9.15	9.25	34.37	81.23	115.52	130.33	151.52	44.08
158	28.77	135.85	123.84	106.16	68.32	22.37	9.41	9.51	37.84	83.48	115.04	125.96	142.18	44.51
159	26.21	125.06	120.48	106.57	71.58	26.49	9.69	9.79	42.08	85.99	114.30	121.10	130.88	44.98
160	23.25	112.54	116.58	107.05	75.35	31.26	10.01	10.11	46.99	88.89	113.45	115.46	117.77	45.54
161	19.98	98.77	112.28	107.58	79.50	36.52	10.37	10.49	52.40	92.08	112.51	109.25	103.33	46.14
162	16.43	87.90	107.33	107.35	83.43	42.69	10.66	15.30	58.17	94.76	110.75	102.64	87.19	46.57
163	12.69	76.50	102.13	107.11	87.56	49.16	10.95	20.35	64.23	97.56	108.90	95.71	70.25	47.02
164	8.78	65.29	96.57	106.57	91.62	56.00	13.21	26.44	70.52	100.23	106.68	88.47	54.38	47.39
165	4.81	55.56	90.64	105.35	95.13	63.09	19.86	34.43	76.76	102.31	103.81	81.17	42.49	47.57
166	0.76	45.64	84.60	104.11	98.70	70.31	26.63	42.57	83.11	104.44	100.88	73.72	30.37	47.76
167	-3.25	37.29	78.43	102.22	101.76	77.64	37.60	52.11	89.15	105.83	97.38	66.44	22.58	47.64
168	-7.24	29.35	72.25	100.19	104.68	84.97	49.50	61.94	95.10	107.04	93.77	59.23	15.83	47.46
169	-11.11	22.37	66.20	97.96	107.25	92.08	62.76	72.12	100.76	107.95	90.03	52.31	11.08	47.20
170	-14.86	17.36	60.17	95.17	109.09	98.99	79.76	83.60	106.01	108.20	85.85	45.76	10.78	46.73
171	-18.36	12.67	54.52	92.56	110.81	105.46	95.67	94.33	110.92	108.44	81.93	39.64	10.50	46.30

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85

TIME Days	BETA ANGLE	EARTH SPACE													
		ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	END	END
172	-21.62	10.29	49.22	89.78	112.10	111.57	110.30	106.21	115.36	108.28	78.03	34.12	10.19	45.77	127.84
173	-24.54	9.97	44.44	86.97	112.96	117.11	123.21	118.51	119.21	107.79	74.30	29.37	9.87	45.18	124.89
174	-27.09	9.69	40.26	84.51	113.72	121.96	134.51	129.29	122.58	107.36	71.03	25.21	9.59	44.67	122.30
175	-29.17	9.46	36.86	82.50	114.33	125.91	143.70	138.06	125.32	107.01	68.38	21.82	9.36	44.26	120.19
176	-30.75	9.27	34.30	80.83	114.67	129.17	150.65	144.67	127.42	106.58	66.24	19.53	9.17	43.93	118.31
177	-31.77	9.13	32.66	79.62	114.81	131.48	155.12	148.94	128.79	106.19	64.76	18.24	9.03	43.71	116.90
178	-32.21	9.07	31.97	79.11	114.86	132.46	157.02	150.74	129.38	106.02	64.13	17.70	8.97	43.62	116.30
179	-32.15	9.08	32.06	79.19	114.85	132.32	156.75	150.48	129.29	106.05	64.22	17.78	8.97	43.63	116.38
180	-31.47	9.17	33.14	79.98	114.77	130.80	153.80	147.68	128.39	106.31	65.19	18.62	9.07	43.78	117.31
181	-30.25	9.34	35.09	81.41	114.61	128.06	148.48	142.61	126.75	106.77	66.95	20.15	9.24	44.04	119.00
182	-28.53	9.53	37.90	83.12	114.14	124.71	140.89	135.37	124.48	107.12	69.19	22.86	9.43	44.38	120.83
183	-26.36	9.77	41.45	85.21	113.50	120.59	131.30	126.23	121.62	107.48	71.96	26.39	9.67	44.82	123.03
184	-23.84	10.05	45.58	87.64	112.76	115.79	120.13	115.58	118.29	107.90	75.19	30.50	9.95	45.32	125.59
185	-21.00	10.36	50.24	90.37	111.92	110.39	107.55	103.59	114.54	108.38	78.82	35.14	10.26	45.89	128.47
186	-17.95	13.21	55.18	92.87	110.61	104.71	93.82	93.08	110.35	108.41	82.39	40.35	10.53	46.35	130.76
187	-14.71	17.56	60.41	95.28	109.02	98.72	79.08	83.14	105.80	108.19	86.01	46.02	10.79	46.75	132.78
188	-11.38	22.01	65.77	97.76	107.38	92.57	63.97	72.94	101.13	107.96	89.73	51.84	11.06	47.17	134.85
189	-7.99	27.87	71.11	99.82	105.23	86.33	51.71	63.76	96.20	107.26	93.09	57.89	14.58	47.43	136.13
190	-4.63	34.56	76.30	101.52	102.77	80.17	41.70	55.50	91.20	106.24	96.14	63.96	20.25	47.58	136.83
191	-1.32	41.15	81.42	103.21	100.34	74.09	31.84	47.35	86.27	105.24	99.14	69.94	25.85	47.73	137.52
192	1.85	48.29	86.22	104.45	97.75	68.38	24.82	40.39	81.41	103.87	101.67	75.72	33.61	47.71	137.41
193	4.85	55.65	90.70	105.36	95.09	63.02	19.79	34.35	76.69	102.29	103.84	81.24	42.60	47.57	136.79
194	7.60	62.40	94.80	106.21	92.66	58.11	15.18	28.81	72.37	100.85	105.83	86.30	50.84	47.45	136.21
195	10.09	68.54	98.50	106.95	90.44	53.68	11.16	23.87	68.47	99.52	107.60	90.87	58.42	47.33	135.66
196	12.21	75.02	101.46	107.08	88.10	50.00	10.99	21.00	65.02	97.93	108.66	94.81	68.05	47.07	134.34
197	13.96	80.36	103.89	107.19	86.16	46.97	10.85	18.64	62.18	96.61	109.52	98.06	75.98	46.87	133.25
198	15.25	84.32	105.69	107.28	84.73	44.72	10.75	16.89	60.08	95.64	110.17	100.47	81.87	46.71	132.44
199	16.09	86.87	106.85	107.33	83.81	43.28	10.68	15.76	58.72	95.01	110.58	102.01	85.65	46.61	131.92
200	16.42	87.88	107.32	107.35	83.44	42.70	10.66	15.31	58.19	94.76	110.74	102.63	87.16	46.57	131.72
201	16.24	87.32	107.06	107.34	83.64	43.02	10.67	15.56	58.48	94.90	110.65	102.29	86.33	46.59	131.83
202	15.54	85.21	106.10	107.29	84.41	44.22	10.73	16.49	59.61	95.42	110.31	101.01	83.18	46.67	132.26
203	14.36	81.58	104.44	107.22	85.72	46.28	10.82	18.10	61.54	96.31	109.72	98.80	77.79	46.82	133.00
204	12.69	76.49	102.12	107.11	87.57	49.17	10.95	20.35	64.24	97.57	108.89	95.70	70.23	47.02	134.04
205	10.58	70.05	99.19	106.98	89.90	52.82	11.12	23.20	67.66	99.15	107.85	91.79	60.67	47.27	135.35
206	8.08	63.56	95.51	106.35	92.24	57.26	14.39	27.86	71.63	100.60	106.17	87.17	52.26	47.43	136.11
207	5.22	56.55	91.25	105.48	94.77	62.36	19.18	33.61	76.12	102.10	104.10	81.92	43.70	47.56	136.71
208	2.06	48.81	86.53	104.51	97.56	68.00	24.47	39.97	81.08	103.76	101.82	76.10	34.24	47.70	137.37
209	-1.37	41.03	81.33	103.18	100.39	74.19	32.00	47.49	86.36	105.26	99.09	69.84	25.76	47.73	137.51
210	-5.00	33.82	75.73	101.34	103.04	80.85	42.81	56.41	91.75	106.35	95.80	63.29	19.63	47.57	136.76
211	-8.80	26.25	69.85	99.40	105.82	87.83	54.13	65.77	97.41	107.51	92.36	56.42	13.20	47.39	135.96
212	-12.70	20.24	63.63	96.77	108.03	95.02	69.99	77.01	102.99	108.05	88.25	49.52	10.95	47.00	134.03
213	-16.69	14.91	57.22	93.81	109.99	102.37	88.07	89.21	108.57	108.32	83.80	42.56	10.64	46.50	131.55
214	-20.71	10.39	50.72	90.66	111.83	109.84	106.26	102.35	114.16	108.43	79.19	35.61	10.29	45.95	128.77

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85

TIME	BETA	ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	EARTH SPACE
Days	ANGLE													END
215	-24.54	9.97	44.44	86.97	112.96	117.12	123.21	118.52	119.21	107.79	74.30	29.37	9.87	45.18
216	-28.09	9.58	38.62	83.54	114.02	123.87	138.95	133.53	123.90	107.19	69.75	23.57	9.48	44.47
217	-31.86	9.12	32.52	79.52	114.82	131.67	155.50	149.29	128.91	106.16	64.63	18.13	9.01	43.70
218	-35.40	8.63	26.88	75.38	115.27	139.61	170.90	163.95	133.64	104.80	59.55	13.71	8.53	42.95
219	-38.68	8.18	21.64	71.53	115.68	146.99	185.21	177.58	138.04	103.54	54.82	9.61	8.07	42.25
220	-41.56	7.74	17.83	67.86	115.90	155.41	198.04	189.80	142.88	102.22	50.42	7.72	7.63	41.74
221	-44.00	7.34	15.15	64.55	115.97	163.95	209.10	200.35	147.68	100.93	46.50	7.33	7.24	41.37
222	-45.86	7.04	13.12	62.03	116.03	170.45	217.52	208.37	151.33	99.95	43.52	7.04	6.93	41.10
223	-47.09	6.84	11.77	60.36	116.07	174.75	223.09	213.68	153.75	99.30	41.55	6.85	6.73	40.91
224	-47.60	6.75	11.21	59.66	116.08	176.54	225.42	215.90	154.76	99.03	40.72	6.77	6.65	40.84
225	-47.40	6.79	11.43	59.94	116.08	175.83	224.50	215.02	154.36	99.14	41.05	6.80	6.68	40.87
226	-46.47	6.94	12.44	61.19	116.05	172.59	220.30	211.02	152.54	99.63	42.53	6.95	6.83	41.00
227	-44.89	7.20	14.18	63.35	116.00	167.05	213.11	204.17	149.42	100.46	45.08	7.19	7.09	41.24
228	-42.76	7.55	16.52	66.24	115.93	159.59	203.45	194.96	145.23	101.59	48.50	7.53	7.44	41.56
229	-40.14	7.98	19.39	69.80	115.85	150.42	191.57	183.64	140.07	102.97	52.71	7.94	7.87	41.95
230	-37.16	8.39	24.07	73.31	115.49	143.57	178.58	171.27	136.00	104.13	57.01	11.51	8.28	42.57
231	-33.89	8.84	29.28	77.14	115.07	136.24	164.35	157.72	131.63	105.38	61.71	15.59	8.73	43.26
232	-30.46	9.31	34.76	81.17	114.64	128.53	149.39	143.47	127.03	106.70	66.65	19.89	9.21	43.99
233	-26.88	9.71	40.60	84.71	113.66	121.57	133.59	128.41	122.30	107.39	71.30	25.55	9.61	44.71
234	-23.27	10.11	46.52	88.19	112.59	114.70	117.59	113.15	117.53	108.00	75.92	31.44	10.01	45.44
235	-19.65	10.94	52.45	91.60	111.45	107.84	101.52	98.28	112.73	108.53	80.49	37.38	10.40	46.13
236	-16.11	15.68	58.14	94.24	109.71	101.31	85.47	87.45	107.77	108.29	84.44	43.57	10.68	46.58
237	-12.66	20.30	63.70	96.81	108.01	94.94	69.80	76.88	102.93	108.05	88.30	49.60	10.96	47.01
238	-9.40	25.06	68.92	99.10	106.26	88.93	55.92	67.24	98.31	107.69	91.81	55.33	12.19	47.37
239	-6.33	31.16	73.66	100.66	104.01	83.30	46.78	59.69	93.74	106.76	94.59	60.88	17.37	47.51
240	-3.54	36.72	77.98	102.08	101.97	78.17	38.46	52.82	89.58	105.91	97.12	65.92	22.09	47.63
241	-1.04	41.71	81.86	103.35	100.14	73.57	31.00	46.66	85.85	105.15	99.39	70.45	26.33	47.74
242	1.11	46.48	85.11	104.22	98.40	69.70	26.06	41.88	82.57	104.26	101.13	74.35	31.39	47.74
243	2.88	50.82	87.75	104.76	96.84	66.54	23.10	38.32	79.79	103.33	102.41	77.61	36.69	47.66
244	4.23	54.13	89.77	105.17	95.64	64.13	20.83	35.61	77.67	102.62	103.39	80.09	40.74	47.60
245	5.12	56.30	91.09	105.45	94.86	62.54	19.35	33.82	76.28	102.15	104.03	81.73	43.40	47.56
246	5.53	57.31	91.71	105.57	94.49	61.81	18.66	32.99	75.63	101.94	104.33	82.49	44.63	47.54
247	5.53	57.32	91.71	105.57	94.49	61.80	18.65	32.98	75.63	101.94	104.33	82.49	44.64	47.54
248	5.06	56.17	91.01	105.43	94.91	62.64	19.44	33.93	76.37	102.18	103.99	81.63	43.23	47.56
249	4.11	53.84	89.59	105.14	95.75	64.34	21.03	35.84	77.86	102.68	103.30	79.88	40.38	47.61
250	2.71	50.42	87.51	104.71	96.98	66.83	23.37	38.65	80.05	103.42	102.29	77.31	36.21	47.67
251	0.88	45.93	84.77	104.15	98.60	70.10	26.44	42.34	82.93	104.38	100.97	73.94	30.71	47.75
252	-1.32	41.15	81.42	103.21	100.34	74.09	31.84	47.35	86.27	105.24	99.14	69.94	25.85	47.73
253	-3.89	36.02	77.44	101.90	102.23	78.81	39.51	53.69	90.10	106.02	96.80	65.29	21.50	47.61
254	-6.75	30.33	73.02	100.44	104.32	84.06	48.03	60.72	94.36	106.89	94.21	60.12	16.66	47.49
255	-9.91	24.04	68.13	98.84	106.63	89.87	57.44	68.50	99.07	107.84	91.35	54.41	11.32	47.34
256	-13.26	19.50	62.74	96.36	108.30	96.05	72.51	78.70	103.77	108.09	87.63	48.55	10.91	46.93
257	-16.82	14.73	57.00	93.71	110.06	102.62	88.68	89.62	108.76	108.33	83.65	42.33	10.62	46.49

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85

TIME Days	BETA ANGLE	EARTH SPACE													
		ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	END	END
258	-20.48	10.42	51.10	90.88	111.76	109.40	105.23	101.37	113.85	108.47	79.49	35.99	10.32	45.99	129.01
259	-24.26	10.00	44.90	87.24	112.88	116.58	121.97	117.33	118.84	107.83	74.66	29.83	9.90	45.24	125.17
260	-28.03	9.59	38.73	83.60	114.00	123.75	138.66	133.24	123.81	107.20	69.84	23.68	9.49	44.48	121.34
261	-31.77	9.13	32.66	79.62	114.81	131.48	155.12	148.94	128.79	106.19	64.76	18.24	9.03	43.71	116.90
262	-35.46	8.62	26.78	75.30	115.27	139.76	171.18	164.23	133.73	104.78	59.45	13.63	8.52	42.93	111.81
263	-38.97	8.14	21.18	71.20	115.72	147.63	186.45	178.77	138.42	103.43	54.41	9.25	8.03	42.19	106.98
264	-42.26	7.63	17.06	66.92	115.92	157.85	201.20	192.81	144.25	101.85	49.30	7.61	7.52	41.63	101.66
265	-45.19	7.15	13.85	62.94	116.01	168.11	214.49	205.48	150.02	100.30	44.59	7.15	7.04	41.20	96.60
266	-47.70	6.74	11.09	59.52	116.09	176.90	225.89	216.35	154.96	98.98	40.55	6.75	6.63	40.82	92.26
267	-49.63	6.42	8.98	56.90	116.15	183.65	234.63	224.68	158.75	97.96	37.46	6.45	6.32	40.53	88.93
268	-50.93	6.21	7.56	55.14	116.19	188.19	240.51	230.28	161.30	97.28	35.38	6.25	6.11	40.34	86.70
269	-51.46	6.12	6.98	54.42	116.20	190.05	242.93	232.58	162.35	97.00	34.52	6.17	6.02	40.26	85.78
270	-51.21	6.16	7.24	54.75	116.20	189.20	241.83	231.53	161.87	97.12	34.91	6.20	6.06	40.30	86.20
271	-50.21	6.32	8.34	56.11	116.16	185.69	237.27	227.20	159.90	97.65	36.52	6.36	6.22	40.45	87.93
272	-48.49	6.61	10.23	58.45	116.11	179.66	229.47	219.75	156.51	98.56	39.29	6.63	6.50	40.70	90.90
273	-46.18	6.99	12.76	61.59	116.04	171.58	218.98	209.77	151.97	99.78	43.00	6.99	6.88	41.05	94.89
274	-43.34	7.45	15.88	65.45	115.95	161.63	206.09	197.48	146.37	101.28	47.56	7.44	7.34	41.47	99.79
275	-40.14	7.98	19.39	69.80	115.85	150.42	191.57	183.64	140.07	102.97	52.71	7.94	7.87	41.95	105.32
276	-36.63	8.46	24.91	73.93	115.42	142.39	176.28	169.08	135.30	104.33	57.77	12.17	8.35	42.68	110.20
277	-33.19	8.93	30.40	77.96	114.99	134.66	161.29	154.81	130.69	105.65	62.72	16.47	8.83	43.41	114.94
278	-29.45	9.43	36.40	82.23	114.42	126.45	144.95	139.25	125.69	106.96	68.02	21.36	9.33	44.20	119.90
279	-25.51	9.86	42.85	86.03	113.25	118.96	127.51	122.62	120.49	107.62	73.05	27.79	9.76	44.99	123.90
280	-21.61	10.29	49.25	89.79	112.10	111.54	110.23	106.14	115.34	108.28	78.05	34.15	10.19	45.77	127.86
281	-17.72	13.53	55.56	93.04	110.50	104.27	92.75	92.36	110.02	108.39	82.65	40.76	10.55	46.38	130.91
282	-13.93	18.60	61.67	95.87	108.63	97.28	75.54	80.75	104.70	108.14	86.88	47.39	10.86	46.85	133.27
283	-10.26	23.52	67.58	98.60	106.83	90.50	58.88	69.51	99.56	107.89	90.98	53.80	11.15	47.31	135.55
284	-6.79	30.25	72.95	100.42	104.35	84.14	48.15	60.83	94.42	106.90	94.18	60.04	16.59	47.48	136.38
285	-3.53	36.74	78.00	102.08	101.96	78.15	38.43	52.80	89.57	105.91	97.13	65.94	22.11	47.63	137.06
286	-0.55	42.67	82.61	103.60	99.78	72.68	29.55	45.47	85.13	105.01	99.83	71.32	27.15	47.77	137.68
287	2.12	48.96	86.62	104.53	97.51	67.89	24.36	39.85	80.98	103.73	101.86	76.22	34.43	47.69	137.36
288	4.42	54.61	90.06	105.23	95.47	63.78	20.51	35.21	77.37	102.52	103.53	80.45	41.32	47.59	136.88
289	6.34	59.29	92.91	105.82	93.78	60.37	17.30	31.36	74.36	101.51	104.91	83.97	47.05	47.50	136.48
290	7.81	62.91	95.11	106.27	92.48	57.74	14.83	28.39	72.05	100.74	105.98	86.68	51.47	47.44	136.17
291	8.82	65.39	96.63	106.58	91.58	55.93	13.14	26.35	70.46	100.21	106.71	88.55	54.50	47.39	135.96
292	9.36	66.71	97.43	106.74	91.10	54.97	12.24	25.27	69.61	99.93	107.10	89.54	56.11	47.37	135.84
293	9.41	66.82	97.50	106.76	91.06	54.89	12.16	25.18	69.54	99.90	107.13	89.62	56.25	47.37	135.83
294	8.96	65.72	96.83	106.62	91.46	55.69	12.91	26.08	70.24	100.14	106.81	88.80	54.90	47.39	135.93
295	8.03	63.45	95.44	106.34	92.28	57.34	14.46	27.95	71.70	100.62	106.14	87.09	52.13	47.43	136.12
296	6.67	60.10	93.41	105.92	93.49	59.78	16.75	30.70	73.84	101.34	105.15	84.58	48.04	47.49	136.41
297	4.87	55.69	90.72	105.37	95.08	62.99	19.77	34.32	76.67	102.29	103.85	81.27	42.65	47.57	136.78
298	2.71	50.40	87.50	104.71	96.99	66.84	23.38	38.66	80.06	103.42	102.29	77.30	36.18	47.67	137.23
299	0.19	44.23	83.74	103.94	99.21	71.33	27.59	43.73	84.01	104.74	100.47	72.67	28.65	47.78	137.76
300	-2.60	38.59	79.43	102.56	101.28	76.45	35.66	50.51	88.18	105.63	97.97	67.62	23.68	47.67	137.26

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85

TIME	BETA	ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	EARTH SPACE
Days	ANGLE													END
301	-5.65	32.52	74.72	101.00	103.52	82.04	44.75	58.01	92.72	106.55	95.21	62.11	18.53	47.54
302	-8.86	26.13	69.75	99.37	105.87	87.94	54.32	65.92	97.50	107.53	92.30	56.31	13.10	47.39
303	-12.24	20.86	64.38	97.12	107.80	94.17	67.89	75.59	102.34	108.02	88.77	50.33	10.99	47.06
304	-15.68	16.26	58.84	94.56	109.49	100.51	83.49	86.11	107.16	108.26	84.93	44.33	10.72	46.63
305	-19.17	11.58	53.21	91.96	111.21	106.96	99.36	96.83	112.06	108.49	81.02	38.22	10.44	46.19
306	-22.63	10.18	47.57	88.80	112.40	113.49	114.77	110.47	116.69	108.11	76.73	32.48	10.08	45.56
307	-25.74	9.84	42.47	85.80	113.32	119.41	128.55	123.61	120.80	107.59	72.75	27.40	9.74	44.94
308	-28.85	9.50	37.37	82.80	114.24	125.32	142.33	136.74	124.91	107.06	68.78	22.33	9.40	44.32
309	-31.88	9.11	32.49	79.50	114.82	131.71	155.58	149.37	128.93	106.15	64.61	18.11	9.01	43.69
310	-34.57	8.74	28.20	76.35	115.16	137.75	167.29	160.52	132.53	105.12	60.74	14.75	8.64	43.12
311	-36.88	8.43	24.51	73.64	115.45	142.94	177.36	170.11	135.63	104.23	57.41	11.86	8.32	42.63
312	-38.73	8.17	21.57	71.48	115.69	147.08	185.39	177.76	138.09	103.53	54.76	9.55	8.07	42.24
313	-40.03	8.00	19.51	69.95	115.85	150.04	191.07	183.17	139.86	103.02	52.88	7.96	7.89	41.97
314	-40.71	7.88	18.76	69.02	115.87	152.43	194.16	186.11	141.20	102.67	51.79	7.85	7.77	41.86
315	-40.75	7.88	18.71	68.97	115.87	152.58	194.36	186.30	141.28	102.64	51.72	7.84	7.77	41.86
316	-40.14	7.98	19.38	69.80	115.85	150.44	191.58	183.65	140.08	102.97	52.70	7.94	7.87	41.95
317	-38.88	8.15	21.33	71.31	115.71	147.42	186.05	178.38	138.30	103.47	54.55	9.36	8.05	42.21
318	-37.04	8.41	24.26	73.46	115.47	137.96	167.69	160.90	132.65	105.09	60.61	14.64	8.63	43.10
319	-34.66	8.73	28.06	76.24	115.17	131.65	155.45	149.24	128.89	106.16	64.65	18.15	9.01	43.70
320	-31.85	9.12	32.54	79.54	114.81	124.92	141.39	135.85	124.63	107.10	69.05	22.67	9.42	44.36
321	-28.64	9.52	37.72	83.01	114.18	124.92	141.39	135.85	124.63	107.10	69.05	22.67	9.42	44.36
322	-25.16	9.90	43.42	86.37	113.15	118.30	125.96	121.14	120.03	107.68	73.50	28.36	9.80	45.06
323	-21.43	10.31	49.53	89.96	112.04	111.21	109.47	105.41	115.11	108.31	78.27	34.43	10.21	45.80
324	-17.56	13.73	55.80	93.15	110.42	103.99	92.06	91.90	109.80	108.38	82.82	41.03	10.56	46.39
325	-13.56	19.09	62.25	96.14	108.45	96.60	73.88	79.63	104.19	108.11	87.29	48.02	10.89	46.89
326	-9.54	24.78	68.70	99.02	106.36	89.18	56.34	67.58	98.51	107.73	91.69	55.08	11.95	47.36
327	-5.48	32.86	74.98	101.09	103.39	81.73	44.24	57.60	92.47	106.50	95.36	62.42	18.81	47.54
328	-1.49	40.80	81.15	103.12	100.47	74.41	32.36	47.78	86.53	105.29	98.98	69.62	25.56	47.72
329	2.42	49.71	87.08	104.62	97.24	67.35	23.85	39.23	80.51	103.57	102.08	76.78	35.34	47.68
330	6.16	58.87	92.66	105.77	93.93	60.67	17.59	31.71	74.63	101.60	104.79	83.66	46.54	47.51
331	9.75	67.65	98.01	106.86	90.76	54.28	11.59	24.50	69.00	99.72	107.38	90.25	57.27	47.35
332	13.06	77.61	102.63	107.14	87.16	48.53	10.93	19.86	63.65	97.29	109.08	96.39	71.89	46.97
333	16.09	86.88	106.86	107.33	83.80	43.27	10.68	15.76	58.72	95.01	110.58	102.02	85.67	46.61
334	18.75	94.99	110.55	107.50	80.87	38.66	10.47	12.17	54.41	93.01	111.90	106.95	97.72	46.29
335	21.03	103.18	113.66	107.41	78.17	34.83	10.26	10.36	50.66	91.06	112.82	111.24	107.97	45.95
336	22.71	110.27	115.87	107.14	76.03	32.12	10.07	10.17	47.88	89.42	113.30	114.44	115.39	45.64
337	24.07	116.00	117.65	106.92	74.30	29.94	9.92	10.02	45.63	88.09	113.69	117.02	121.39	45.38
338	24.87	119.40	118.71	106.79	73.28	28.64	9.83	9.93	44.30	87.30	113.92	118.55	124.95	45.23
339	25.13	120.49	119.06	106.75	72.95	28.23	9.81	9.91	43.87	87.04	113.99	119.04	126.10	45.19
340	24.84	119.27	118.68	106.80	73.32	28.69	9.84	9.94	44.35	87.33	113.91	118.49	124.82	45.24
341	24.01	115.75	117.58	106.93	74.38	30.03	9.93	10.03	45.73	88.14	113.67	116.91	121.14	45.39
342	22.68	110.13	115.83	107.15	76.07	32.18	10.08	10.18	47.93	89.45	113.29	114.38	115.25	45.64
343	20.89	102.60	113.48	107.44	78.34	35.05	10.27	10.37	50.89	91.19	112.78	110.98	107.36	45.97

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85

TIME Days	BETA ANGLE	EARTH SPACE													
		ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	END	END
344	18.70	94.84	110.49	107.50	80.92	38.75	10.47	12.23	54.49	93.05	111.87	106.86	97.50	46.30	130.30
345	16.16	87.08	106.95	107.33	83.73	43.15	10.68	15.67	58.61	94.96	110.61	102.14	85.97	46.60	131.88
346	13.33	78.43	103.01	107.15	86.86	48.06	10.90	19.49	63.21	97.09	109.21	96.89	73.12	46.94	133.64
347	10.29	69.17	98.79	106.96	90.21	53.32	11.15	23.59	68.13	99.37	107.71	91.26	59.36	47.30	135.53
348	7.07	61.09	94.01	106.04	93.13	59.06	16.08	29.89	73.21	101.13	105.44	85.32	49.24	47.47	136.32
349	3.77	53.01	89.09	105.03	96.05	64.94	21.60	36.52	78.39	102.86	103.06	79.25	39.37	47.62	137.01
350	0.41	44.77	84.07	104.00	99.02	70.94	27.23	43.29	83.67	104.63	100.62	73.07	29.30	47.77	137.71
351	-2.92	37.96	78.94	102.39	101.52	77.03	36.61	51.30	88.66	105.72	97.68	67.04	23.14	47.66	137.19
352	-6.21	31.41	73.86	100.72	103.92	83.07	46.41	59.39	93.55	106.72	94.71	61.10	17.58	47.51	136.50
353	-9.34	25.18	69.01	99.13	106.22	88.81	55.74	67.09	98.21	107.67	91.87	55.45	12.29	47.37	135.85
354	-12.31	20.77	64.27	97.07	107.84	94.29	68.20	75.80	102.44	108.03	88.69	50.21	10.99	47.05	134.27
355	-15.02	17.14	59.90	95.05	109.17	99.30	80.50	84.10	106.24	108.21	85.66	45.48	10.77	46.71	132.59
356	-17.43	13.91	56.01	93.25	110.36	103.75	91.47	91.50	109.62	108.38	82.97	41.26	10.58	46.41	131.09
357	-19.47	11.17	52.73	91.73	111.36	107.52	100.73	97.75	112.48	108.51	80.69	37.69	10.41	46.16	129.82
358	-21.11	10.35	50.06	90.27	111.95	110.61	108.05	104.06	114.69	108.36	78.68	34.95	10.25	45.87	128.36
359	-22.27	10.22	48.16	89.15	112.29	112.81	113.18	108.95	116.22	108.17	77.20	33.07	10.12	45.64	127.18
360	-22.93	10.15	47.08	88.52	112.49	114.06	116.09	111.72	117.08	108.06	76.36	31.99	10.05	45.50	126.52
361	-23.06	10.13	46.87	88.39	112.53	114.31	116.67	112.28	117.26	108.04	76.19	31.78	10.03	45.48	126.38
362	-22.64	10.18	47.55	88.79	112.40	113.52	114.83	110.53	116.71	108.11	76.72	32.46	10.08	45.56	126.81
363	-21.69	10.28	49.11	89.71	112.12	111.71	110.61	106.50	115.45	108.27	77.94	34.01	10.18	45.75	127.77
364	-20.25	10.44	51.48	91.10	111.69	108.96	104.21	100.40	113.54	108.51	79.79	36.37	10.34	46.04	129.24
365	-18.29	12.76	54.63	92.61	110.78	105.34	95.36	94.12	110.82	108.43	82.01	39.76	10.51	46.30	130.55
366	-15.97	15.86	58.37	94.34	109.64	101.06	84.83	87.02	107.57	108.28	84.60	43.81	10.69	46.59	132.00
367	-13.40	19.31	62.52	96.26	108.37	96.30	73.14	79.13	103.96	108.10	87.47	48.31	10.90	46.92	133.60
368	-10.32	23.44	67.48	98.55	106.86	90.61	59.15	69.69	99.64	107.89	90.92	53.70	11.14	47.30	135.51
369	-6.98	29.88	72.66	100.33	104.49	84.48	48.70	61.28	94.70	106.95	94.01	59.71	16.28	47.48	136.34
370	-3.38	37.04	78.23	102.16	101.85	77.88	37.98	52.43	89.34	105.86	97.27	66.21	22.36	47.64	137.09
371	0.36	44.65	84.00	103.99	99.06	71.03	27.31	43.39	83.74	104.65	100.59	72.98	29.16	47.77	137.72
372	4.27	54.24	89.83	105.19	95.60	64.05	20.76	35.51	77.60	102.60	103.42	80.18	40.87	47.60	136.91
373	8.24	63.96	95.76	106.40	92.09	56.97	14.11	27.53	71.37	100.51	106.29	87.48	52.76	47.42	136.08
374	12.28	75.24	101.56	107.09	88.02	49.87	10.99	20.91	64.90	97.87	108.69	94.95	68.38	47.07	134.29
375	16.27	87.42	107.11	107.34	83.61	42.96	10.67	15.51	58.43	94.88	110.67	102.35	86.48	46.59	131.81
376	20.23	99.81	112.61	107.54	79.18	36.11	10.34	10.44	51.98	91.84	112.59	109.73	104.45	46.10	129.25
377	24.05	115.90	117.62	106.92	74.33	29.98	9.92	10.02	45.67	88.11	113.68	116.97	121.29	45.39	125.38
378	27.72	131.41	122.46	106.33	69.66	24.06	9.52	9.62	39.59	84.51	114.74	123.96	137.53	44.70	121.66
379	31.12	145.68	126.94	105.53	65.16	19.00	9.12	9.22	34.02	80.98	115.55	130.83	152.48	44.04	117.80
380	34.24	158.63	131.08	104.34	60.70	15.12	8.68	8.79	29.02	77.33	115.99	137.90	166.09	43.35	113.50
381	36.94	169.83	134.66	103.31	56.85	11.77	8.31	8.42	24.70	74.18	116.37	144.00	177.85	42.76	109.78
382	39.18	179.14	137.64	102.45	53.65	8.98	8.00	8.11	21.10	71.56	116.68	149.08	187.64	42.27	106.69
383	40.87	186.27	140.43	101.69	51.10	7.82	7.75	7.86	18.82	69.40	116.79	153.92	195.11	41.93	104.06
384	41.95	190.94	142.57	101.13	49.39	7.65	7.57	7.68	17.61	67.89	116.79	157.65	199.98	41.74	102.18
385	42.38	192.77	143.41	100.91	48.72	7.58	7.50	7.61	17.14	67.30	116.78	159.11	201.88	41.66	101.45
386	42.14	191.74	142.94	101.03	49.09	7.62	7.54	7.65	17.41	67.64	116.78	158.29	200.82	41.70	101.86

DAILY AVERAGE INCIDENT FLUX (BTU/HR-SQFT) FOR 4-7-84 TO 5-13-85

TIME	BETA	ROW 1	ROW 2	ROW 3	ROW 4	ROW 5	ROW 6	ROW 7	ROW 8	ROW 9	ROW 10	ROW 11	ROW 12	EARTH SPACE
Days	ANGLE													END
387	41.26	187.95	141.20	101.49	50.49	7.76	7.68	7.79	18.39	68.86	116.79	155.26	196.86	41.86
388	39.76	181.54	138.40	102.23	52.82	8.26	7.92	8.03	20.17	70.89	116.77	150.39	190.15	42.14
389	37.75	173.21	135.74	103.00	55.69	10.75	8.20	8.31	23.39	73.23	116.48	145.85	181.41	42.58
390	35.28	162.97	132.47	103.94	59.21	13.82	8.54	8.65	27.34	76.11	116.14	140.26	170.65	43.12
														112.06



## **APPENDIX C**

### **CHARTS**

#### ***BEGINNING OF MISSION TEMPERATURES***

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**BEGINNING OF MISSION**

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C8	A0178	Hi-Res Study of Ultra Heavy Cosmic Rays Structure Boundary	32, 122 170, 171, 228	C - 45 C -116,153
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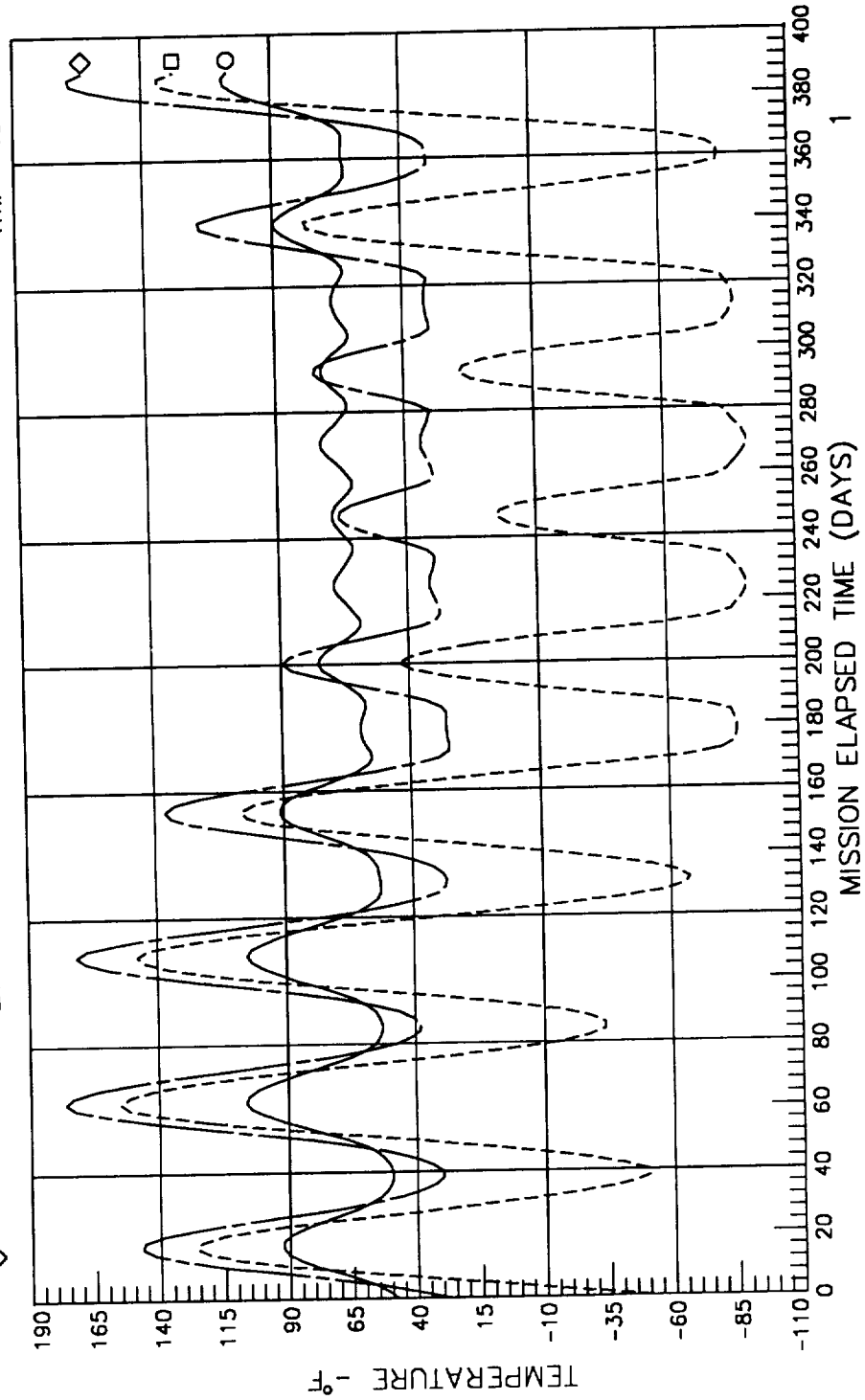
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## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: AI

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 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 1 TRAY  
 □ 91 SURFACE  
 ◇ 271 SURFACE

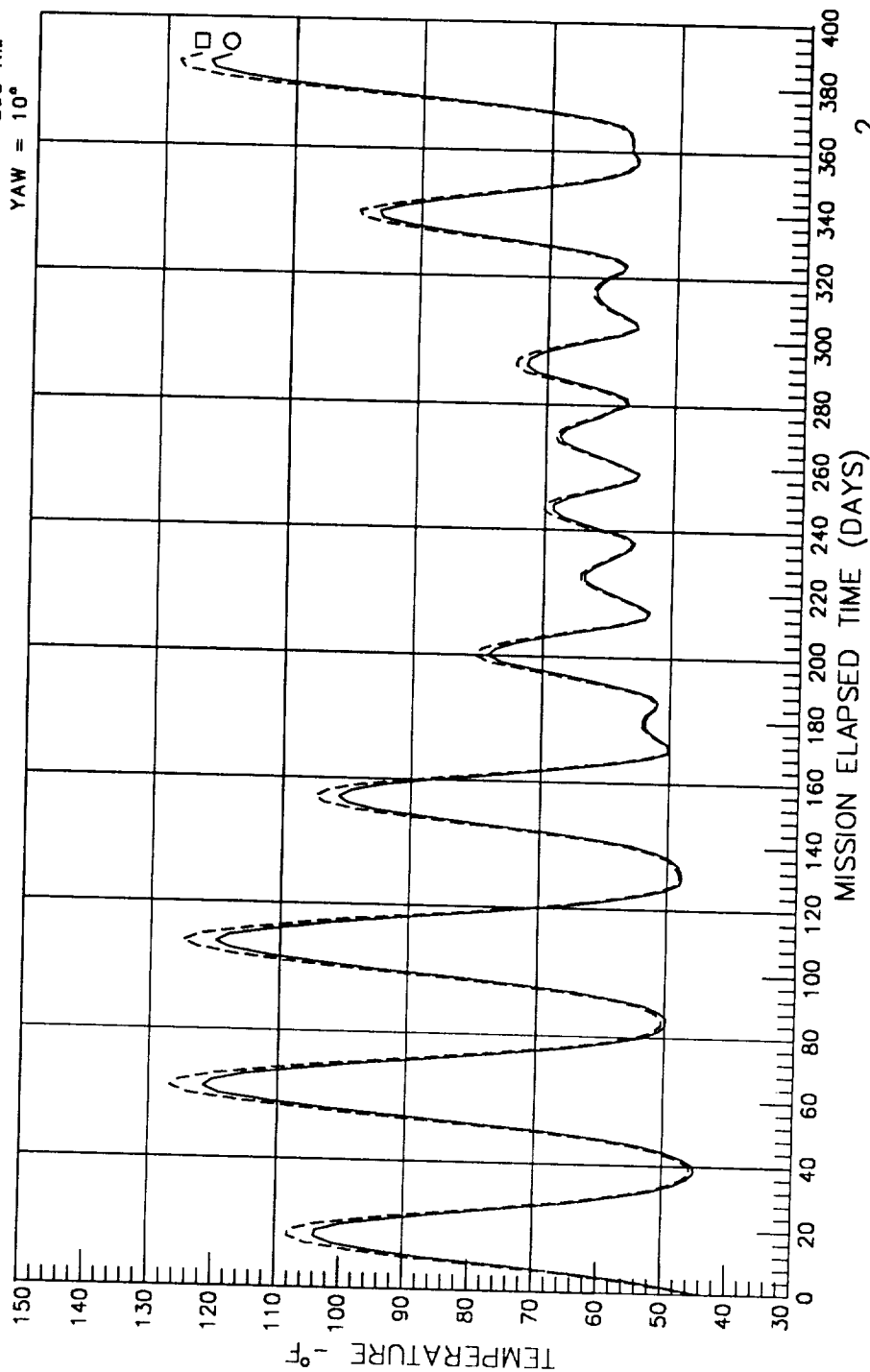


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: B1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ ——— 13 TRAY  
□ - - - 103 SURFACE



# LONG DURATION EXPOSURE FACILITY

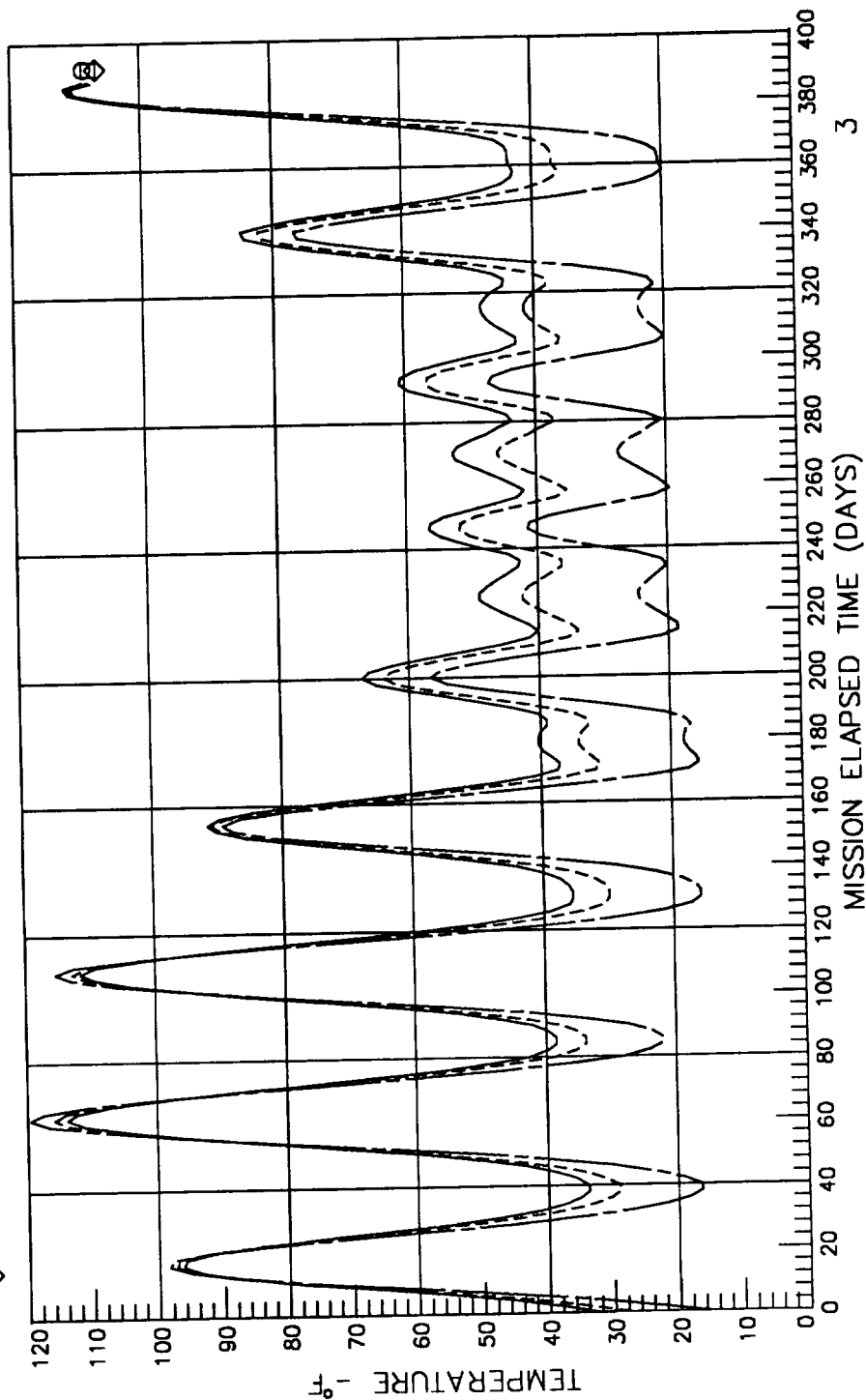
## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: C1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

25 TRAY  
 115 SURFACE  
 274 SURFACE

○  
 □  
 ◇



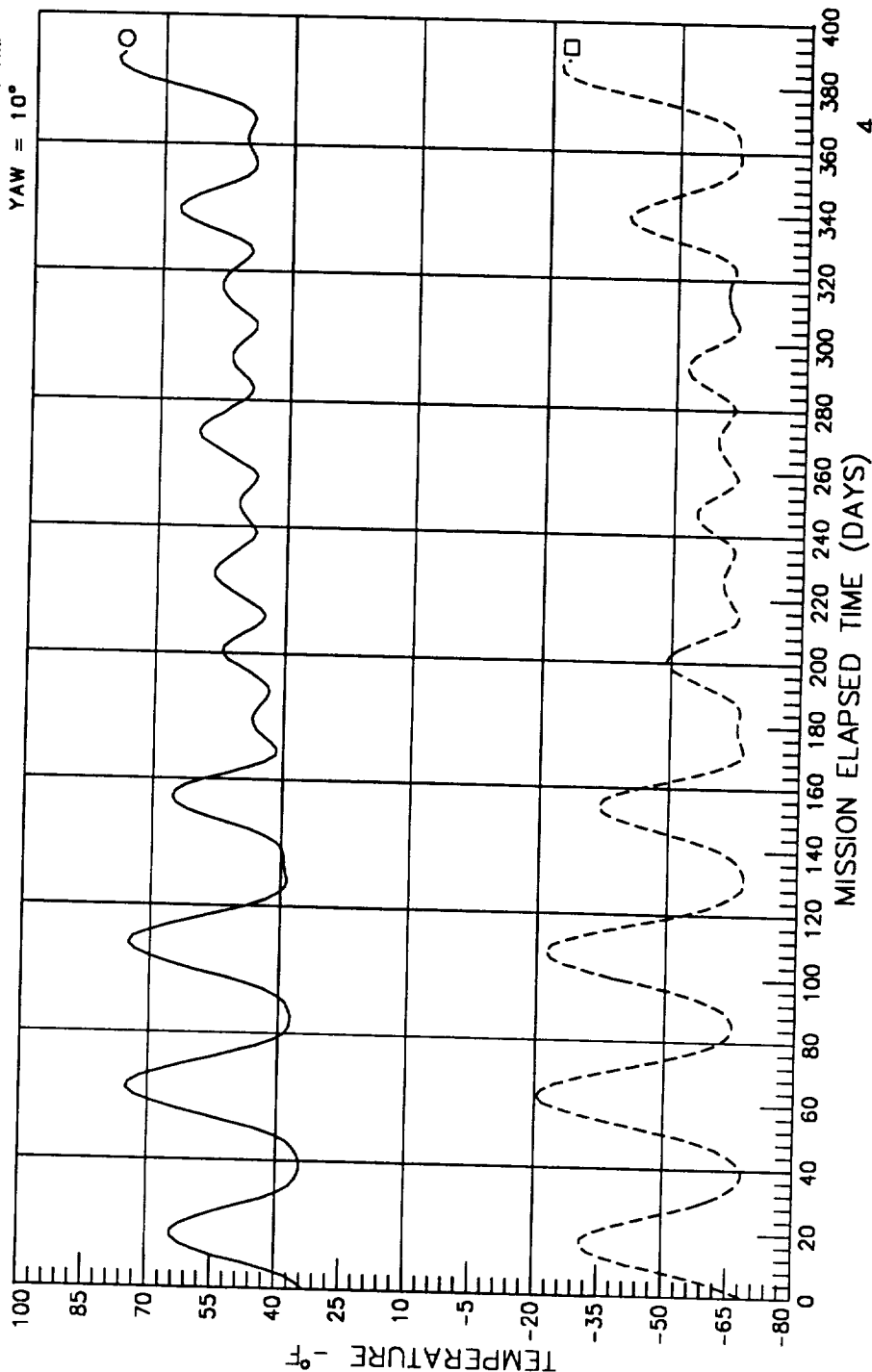
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: D1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 37 TRAY  
 □ - - - - 127 SURFACE



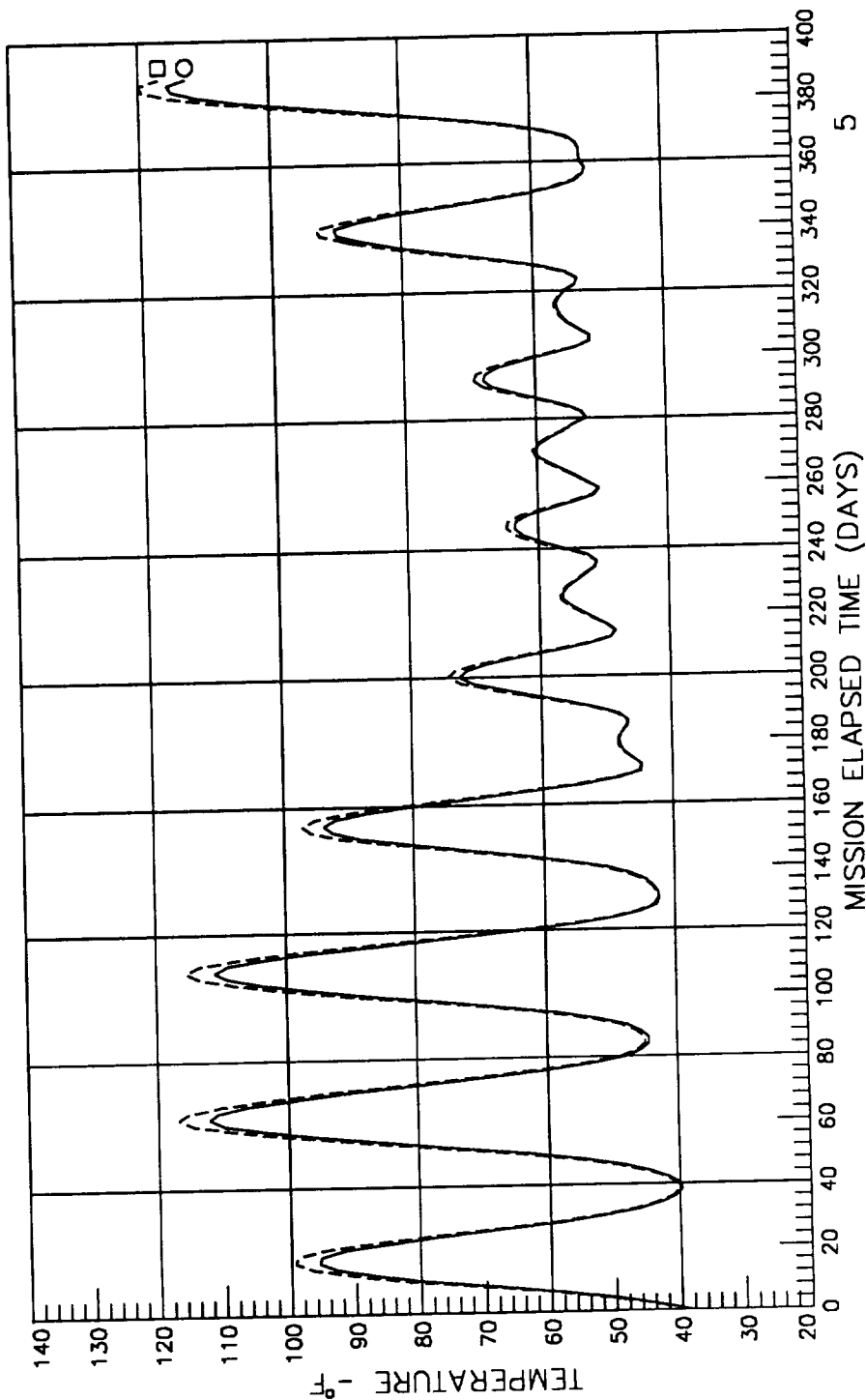
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: E1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 49 TRAY  
 □ - - - - 139 SURFACE



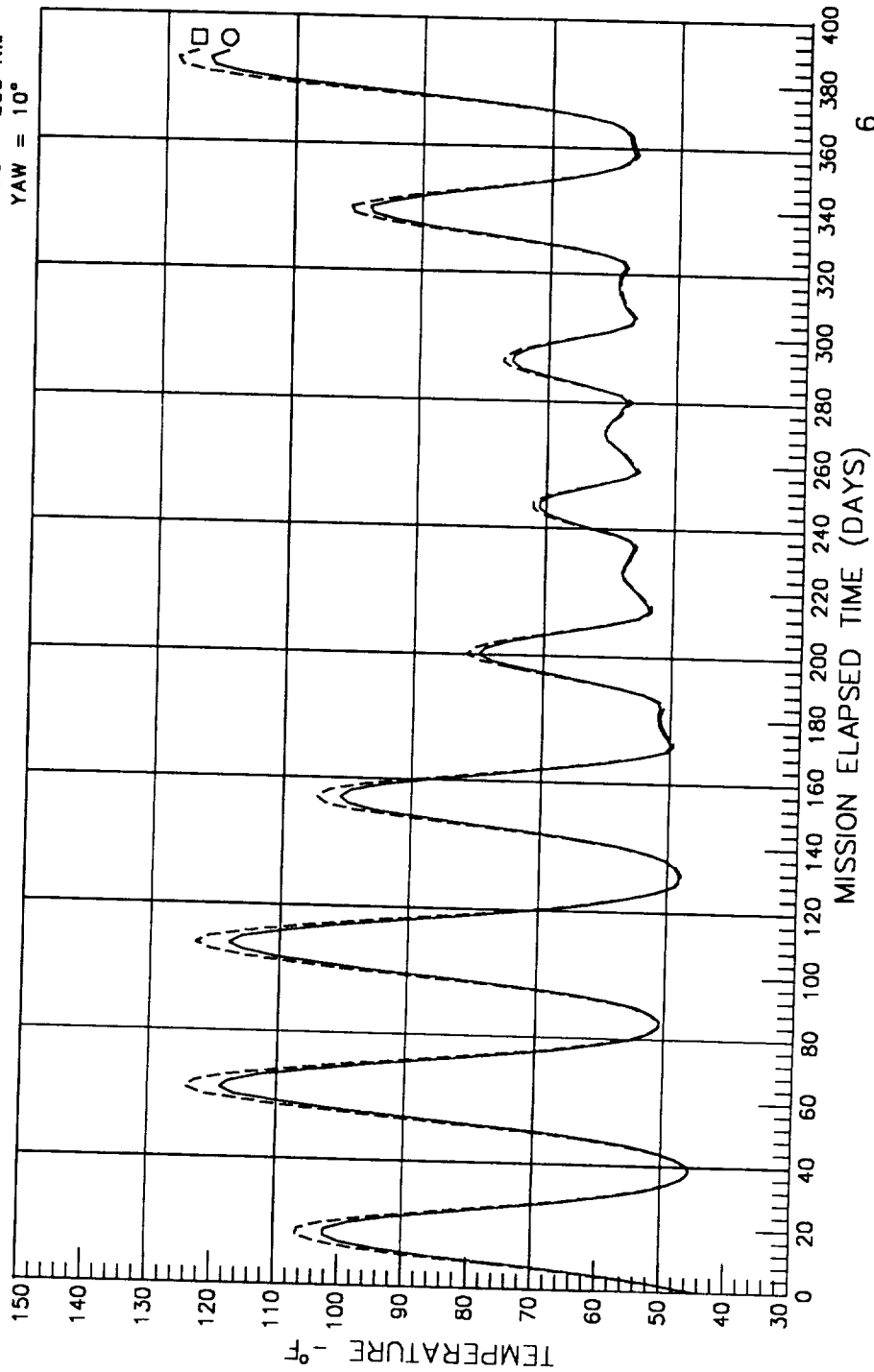
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: F1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 61 TRAY  
 □ - - - 151 SURFACE



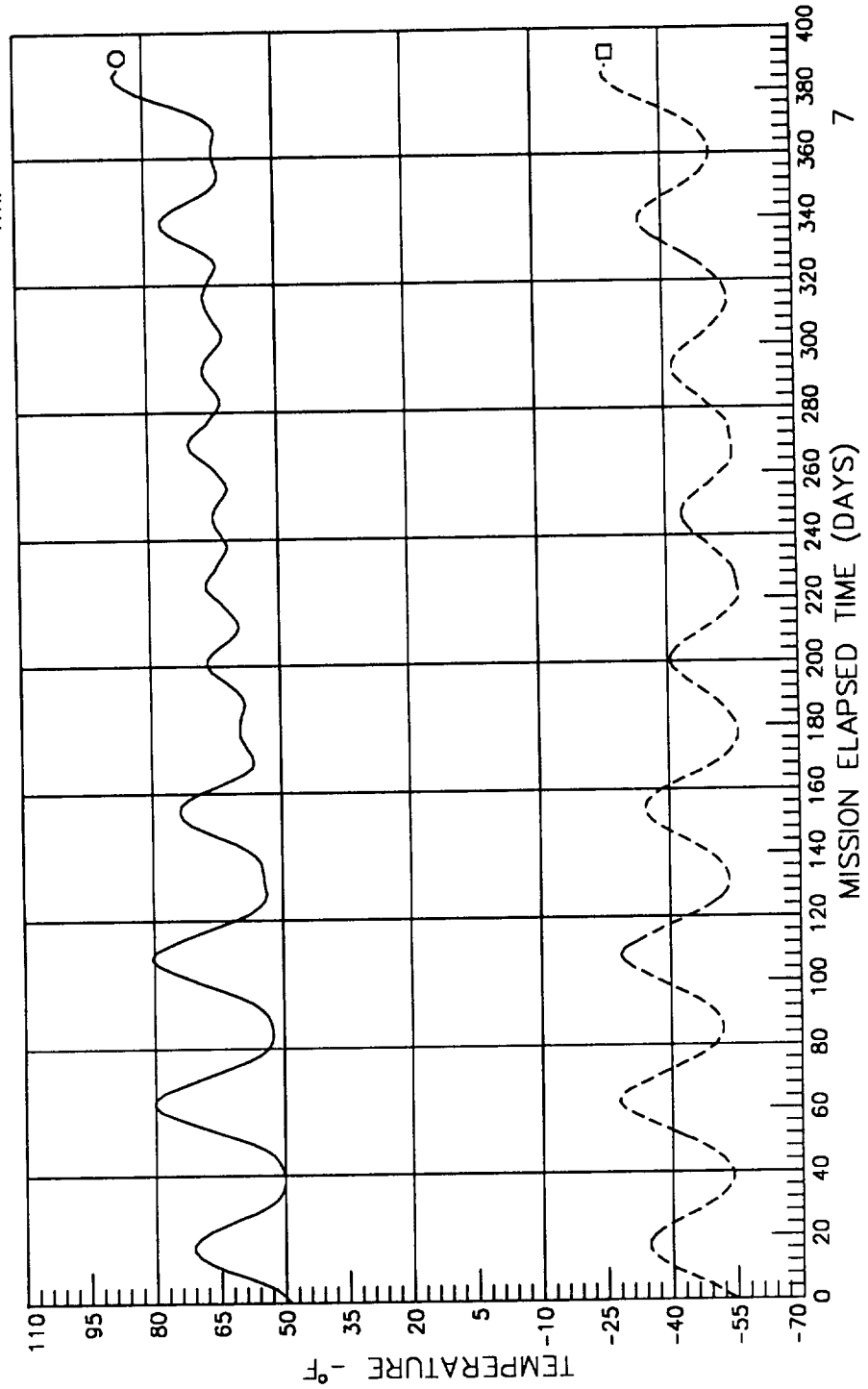
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## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: A2

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 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 2 TRAY  
 □ - - - - 92 SURFACE



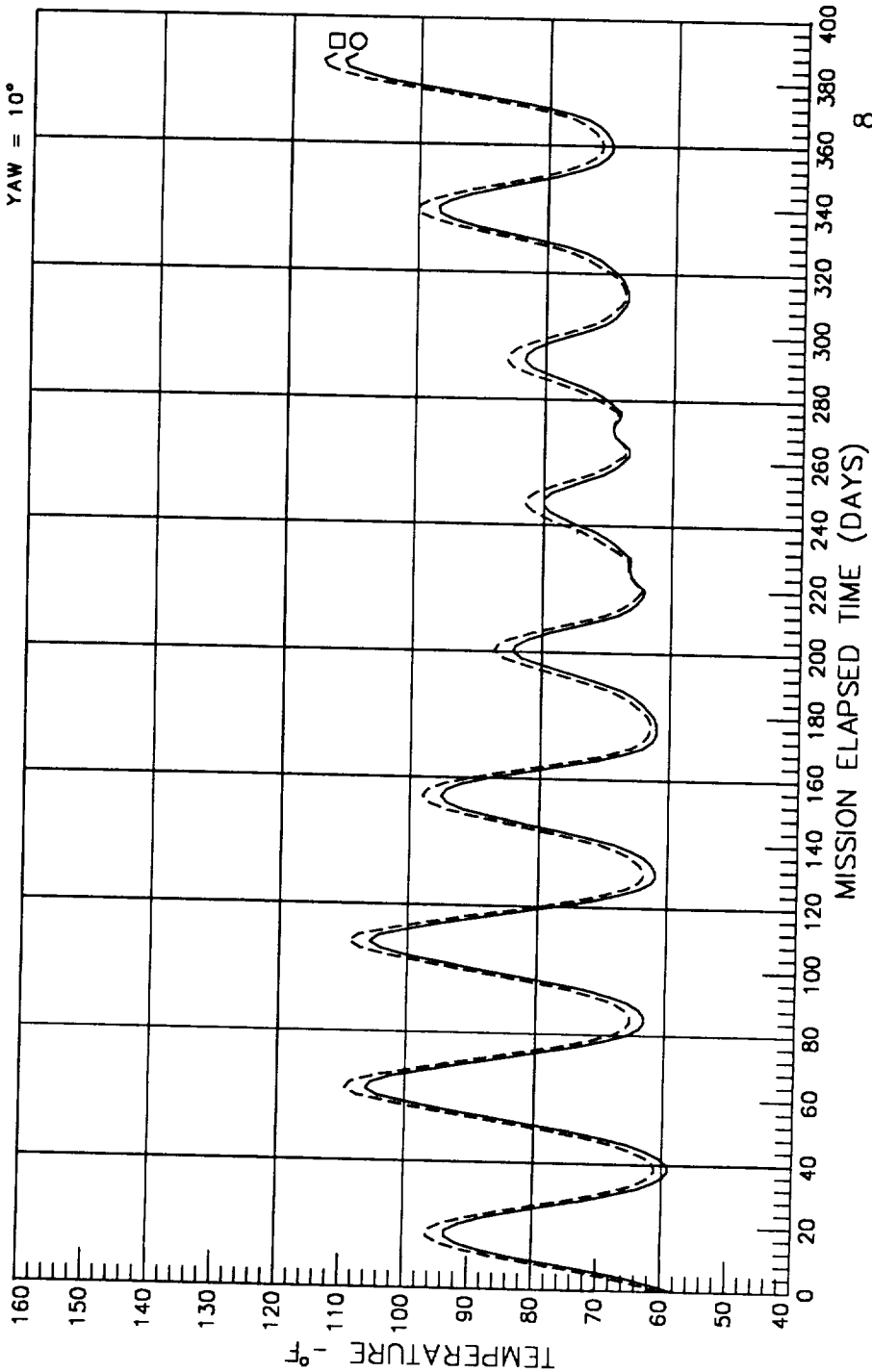
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: B2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 14 TRAY  
 □ - - - 104 SURFACE



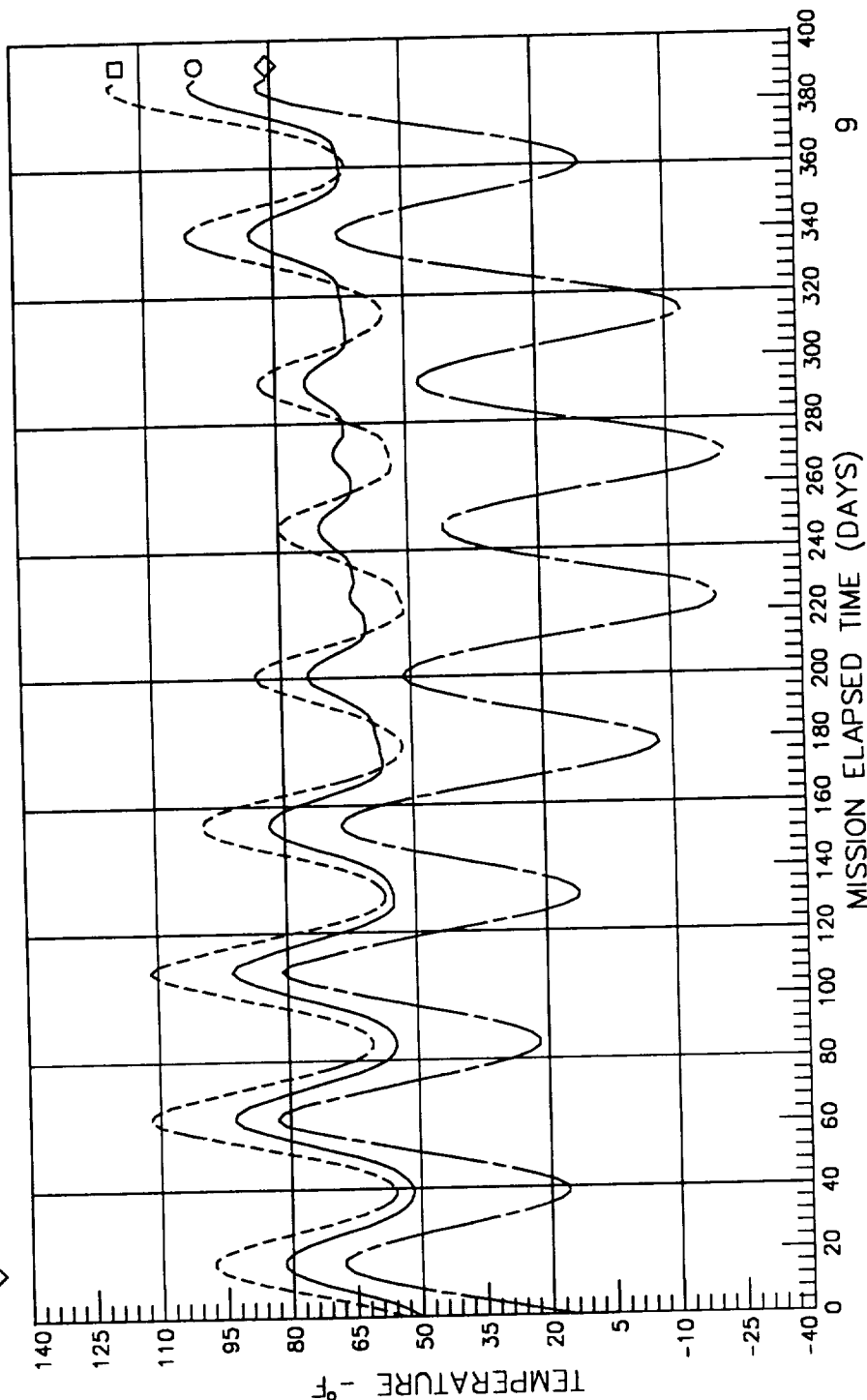


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: C2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 26 TRAY  
□ 116 SURFACE  
◇ 276 SURFACE



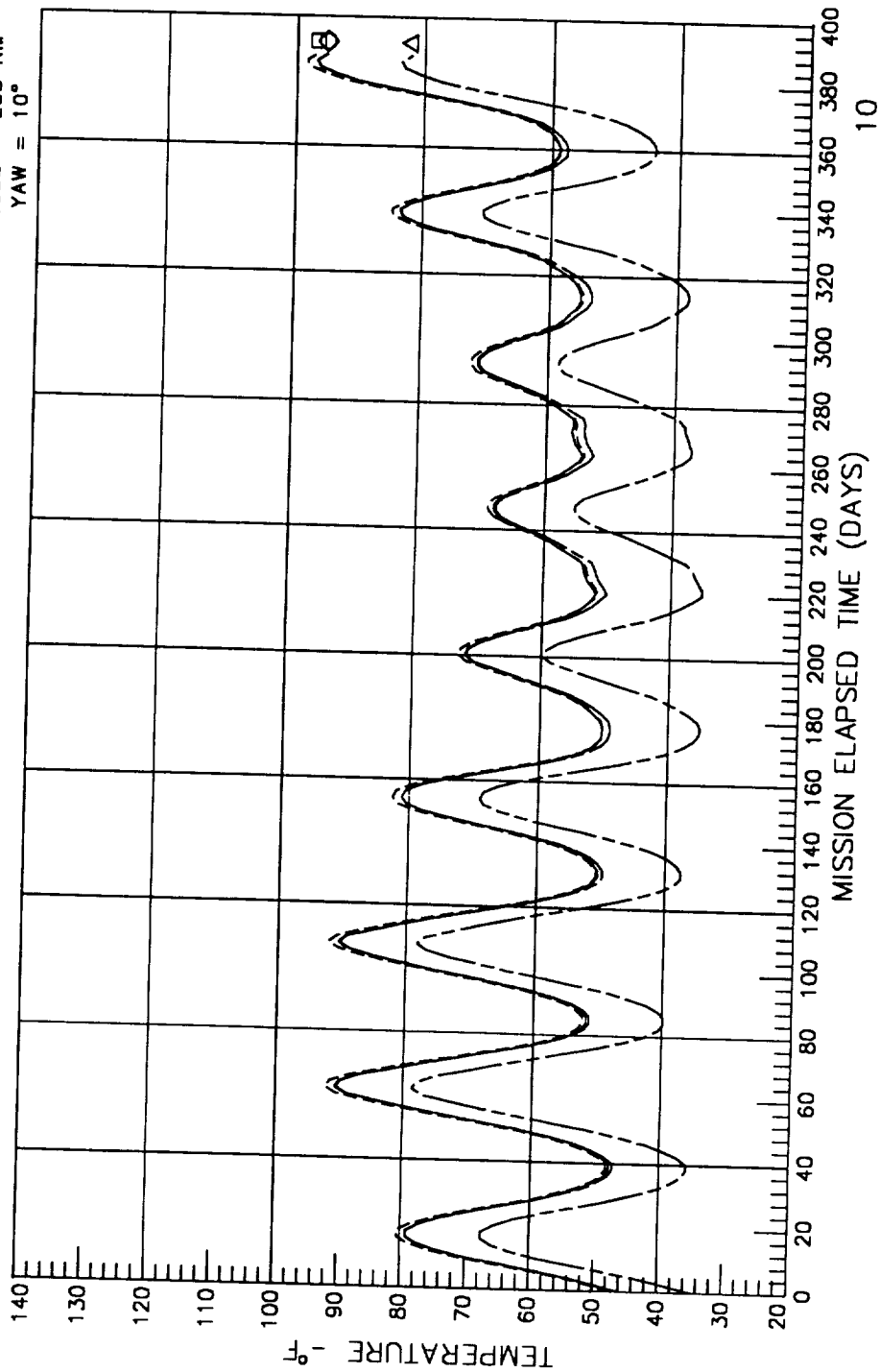
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: D2

- — 38 TRAY
- - - - 128 SURFACE
- ◇ - - - 277 SURFACE
- △ - - - 278 SURFACE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

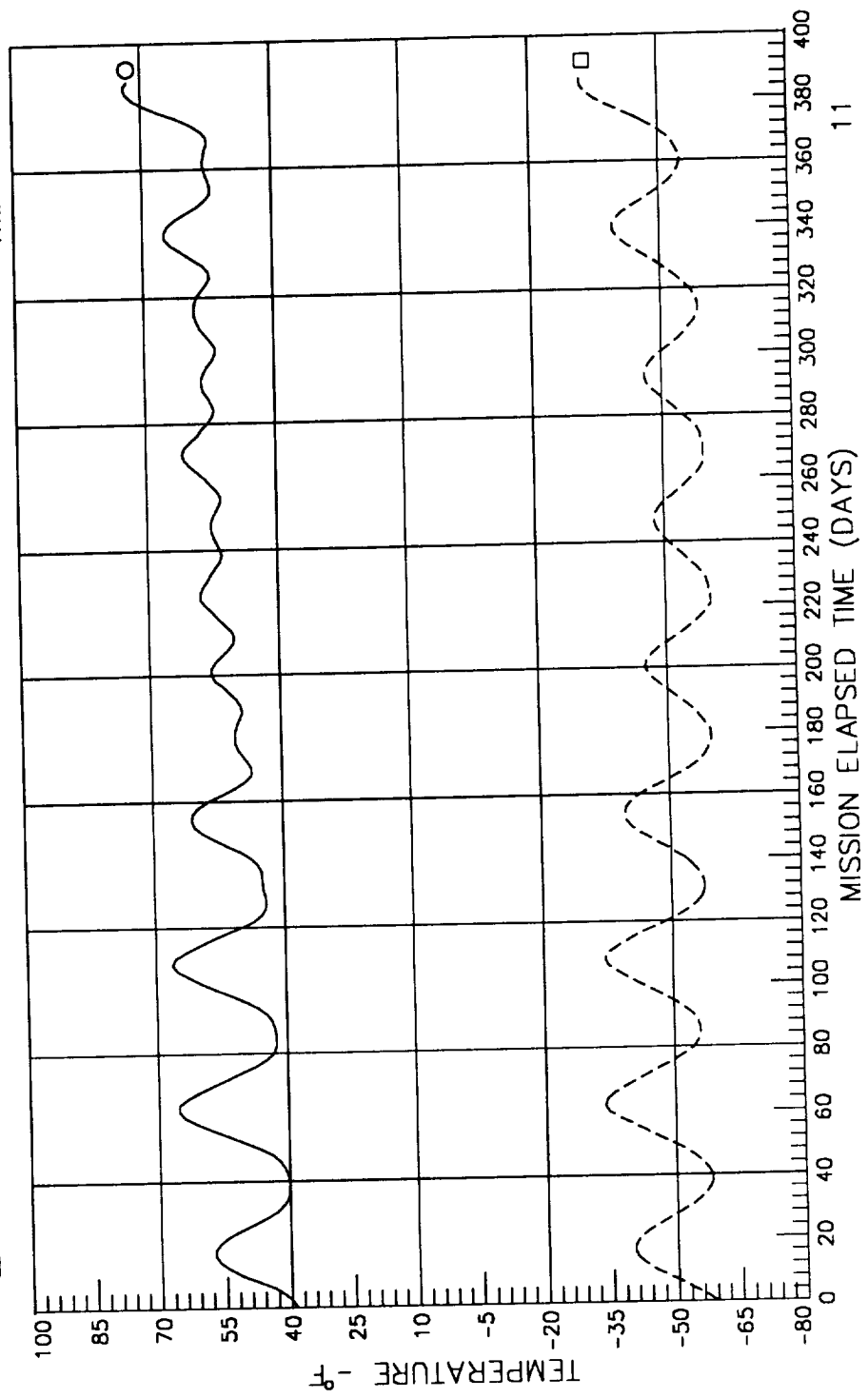


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: E2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 50 TRAY  
 □ 140 SURFACE



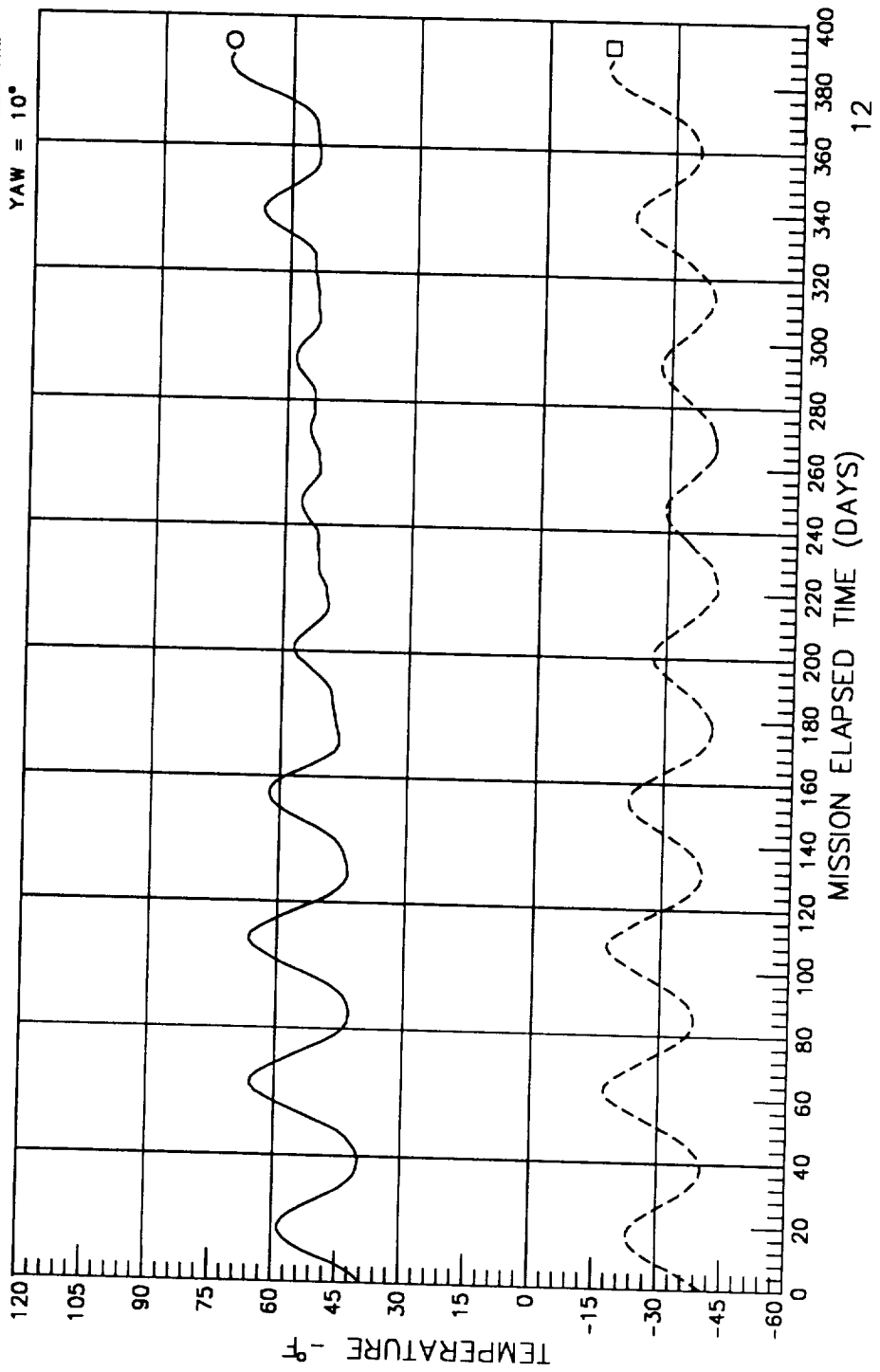
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: F2

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 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 62 TRAY  
 □ - - - 152 SURFACE

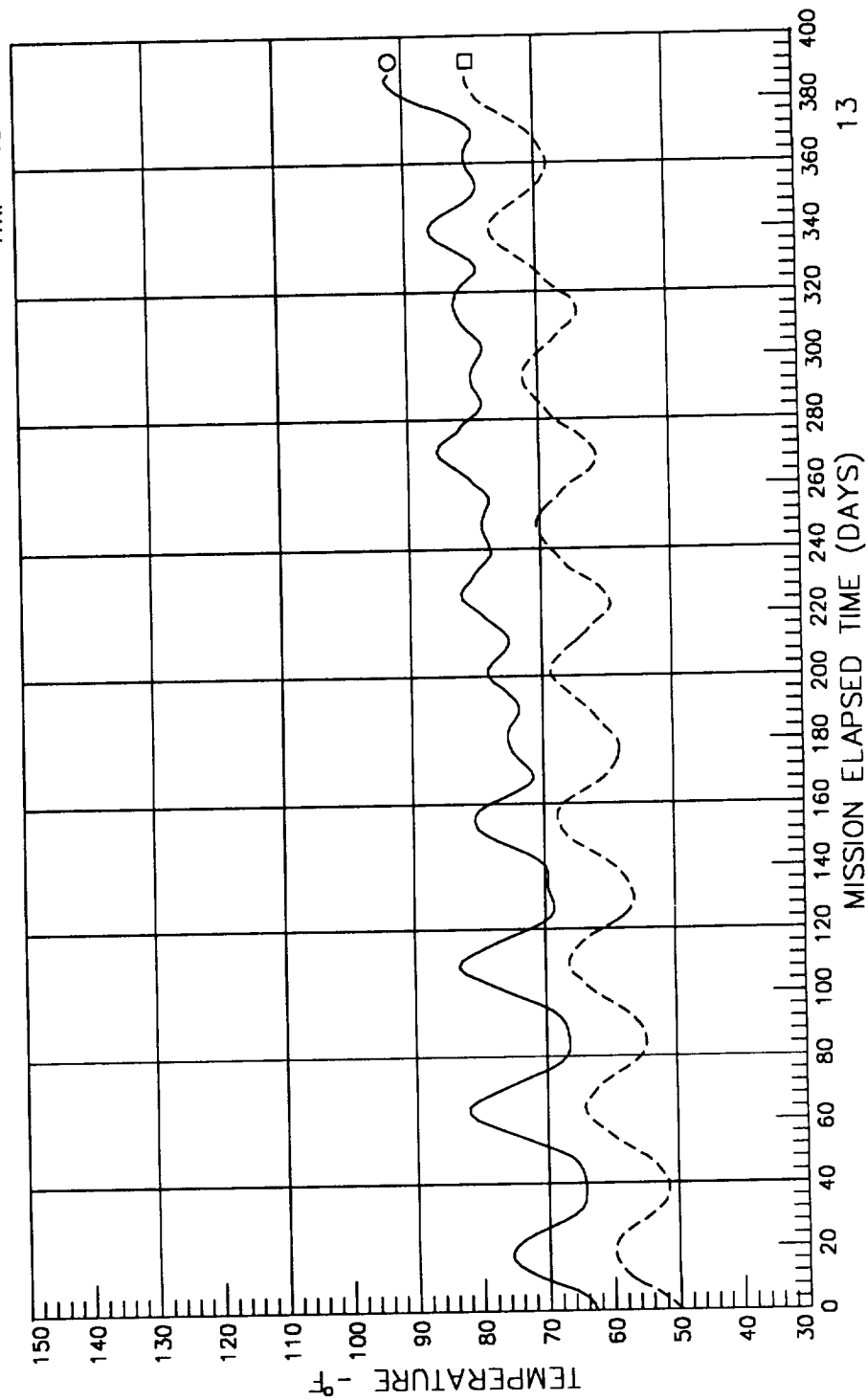


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: A3

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PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 3 TRAY  
□ 93 SURFACE

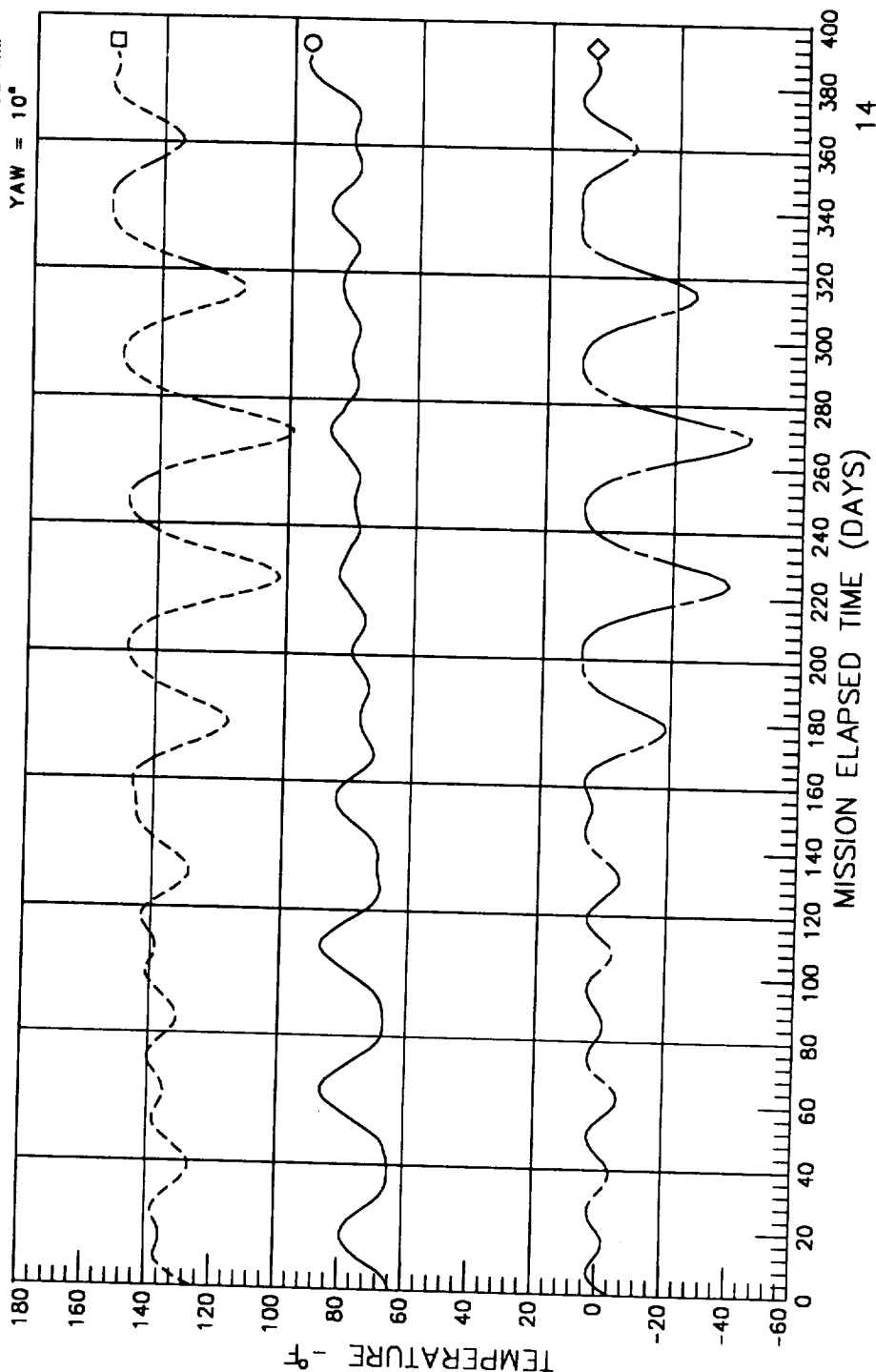


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: B3

○ 15 TRAY  
 □ 105 SURFACE  
 ◇ 273 SURFACE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: C3

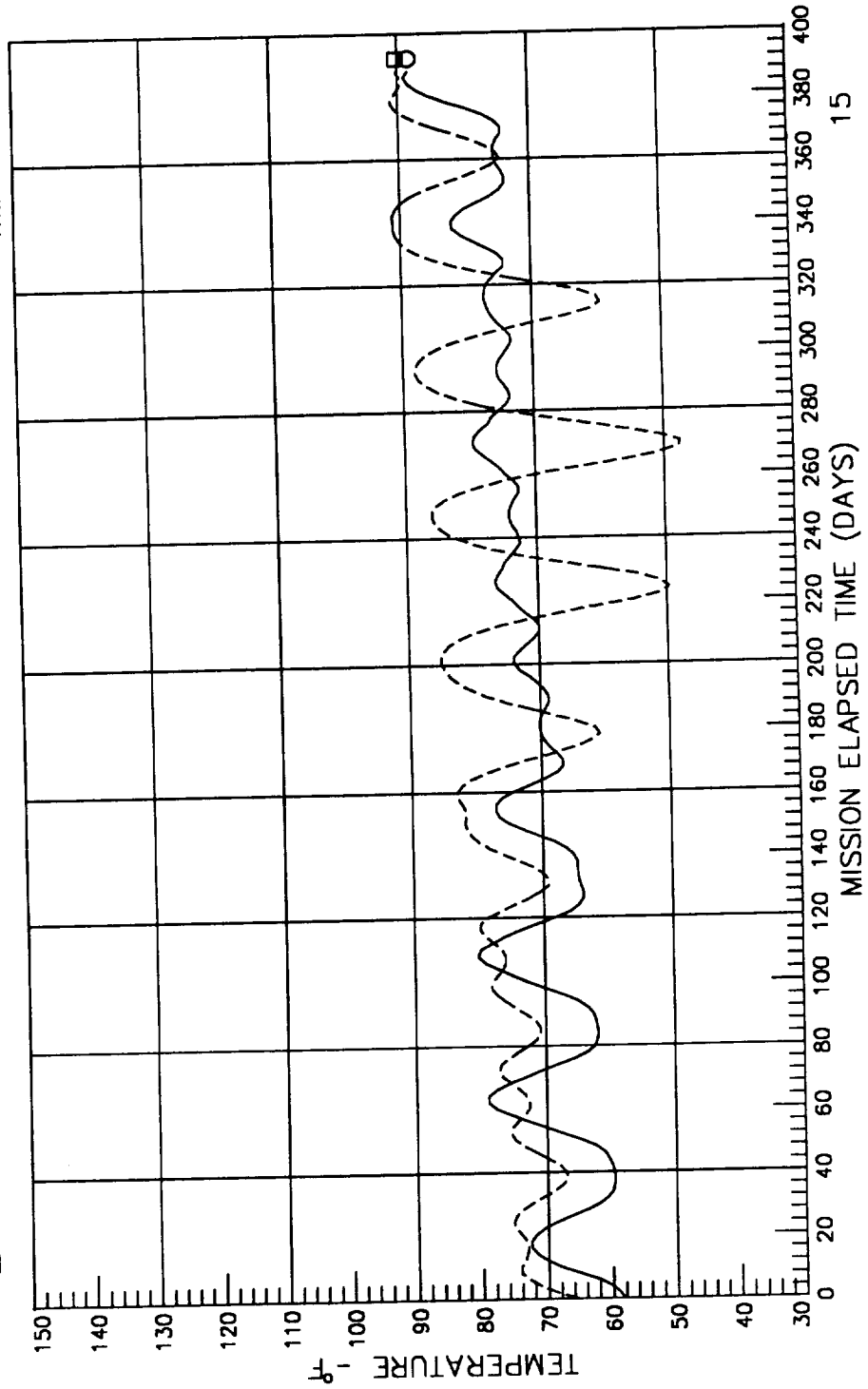
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>

ALBEDO = 31%

ALTITUDE = 255 NM

YAW = 10°

○ ——— 27 TRAY  
□ - - - - 117 SURFACE



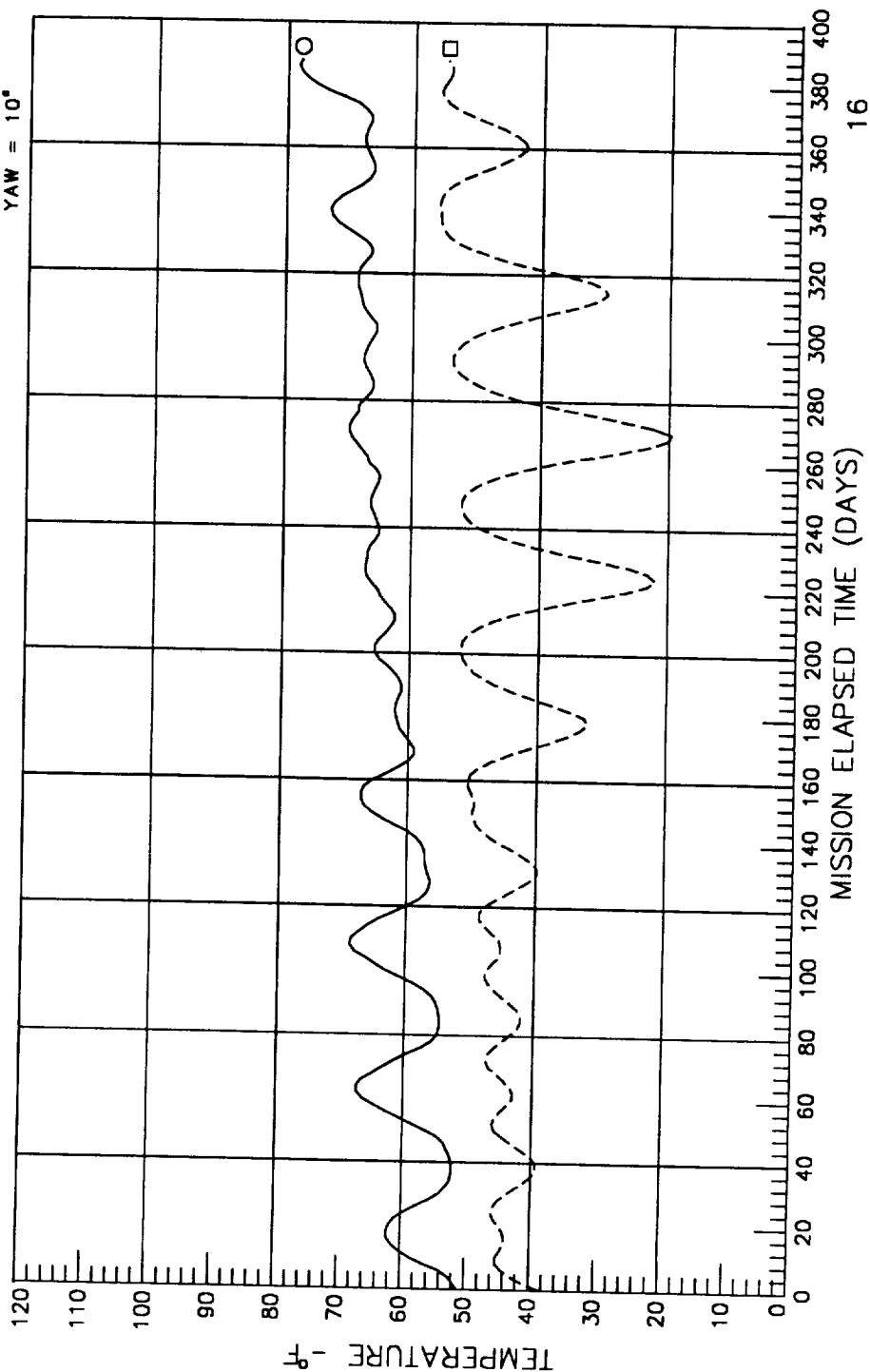
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: D3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 39 TRAY  
 □ - - - 129 SURFACE





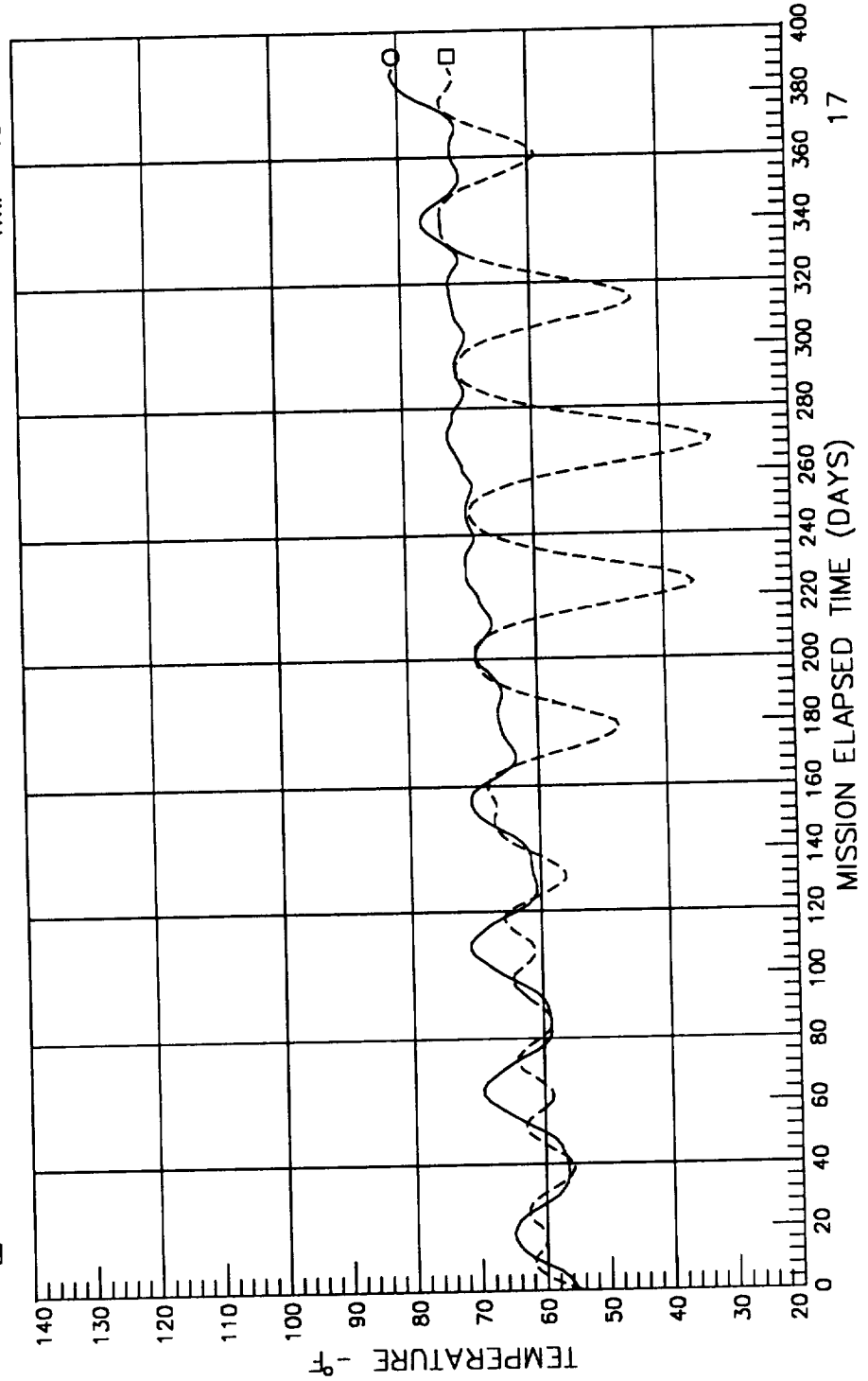
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: E3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 51 TRAY  
 □ - - - 141 SURFACE



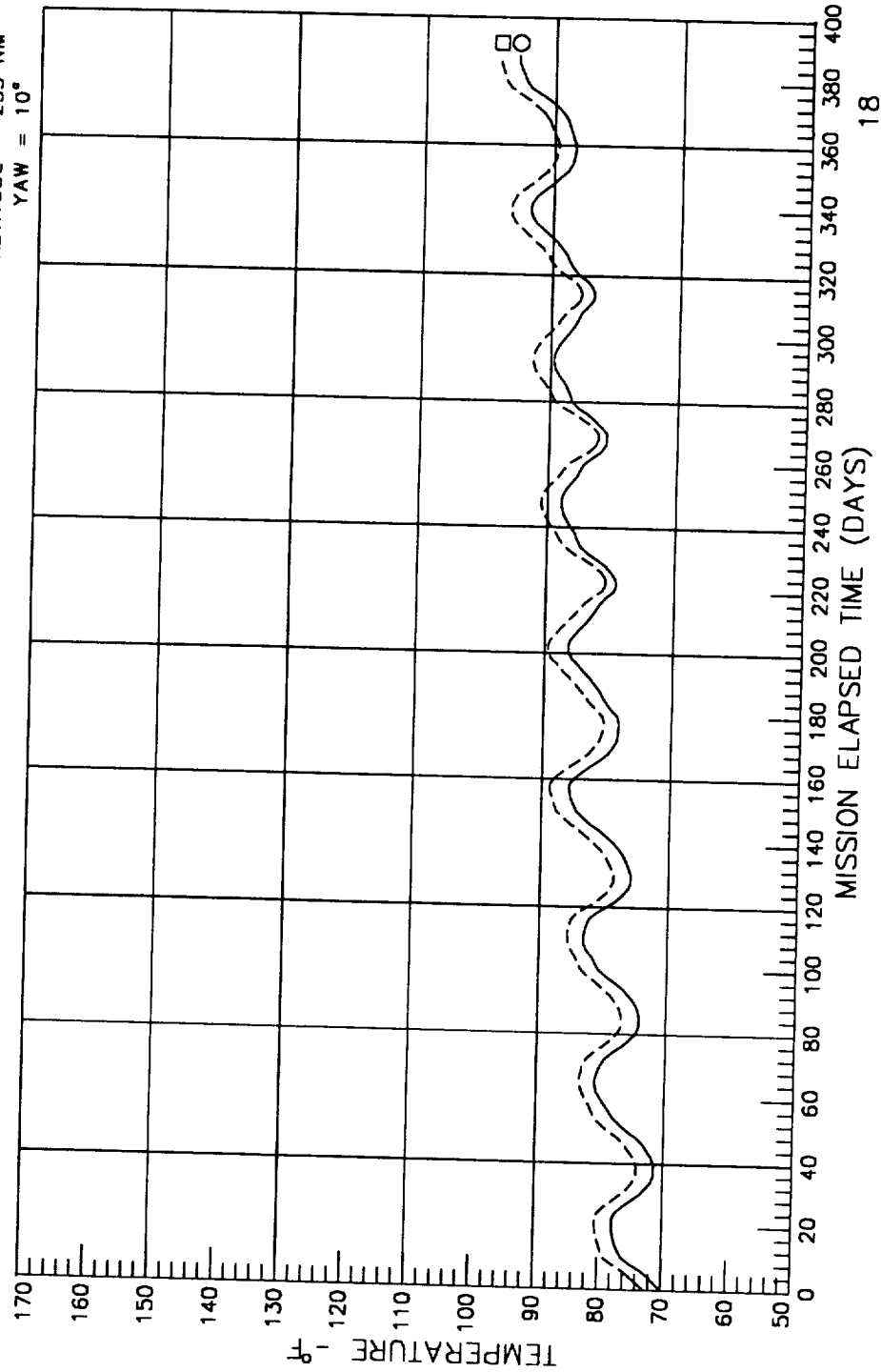
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: F3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

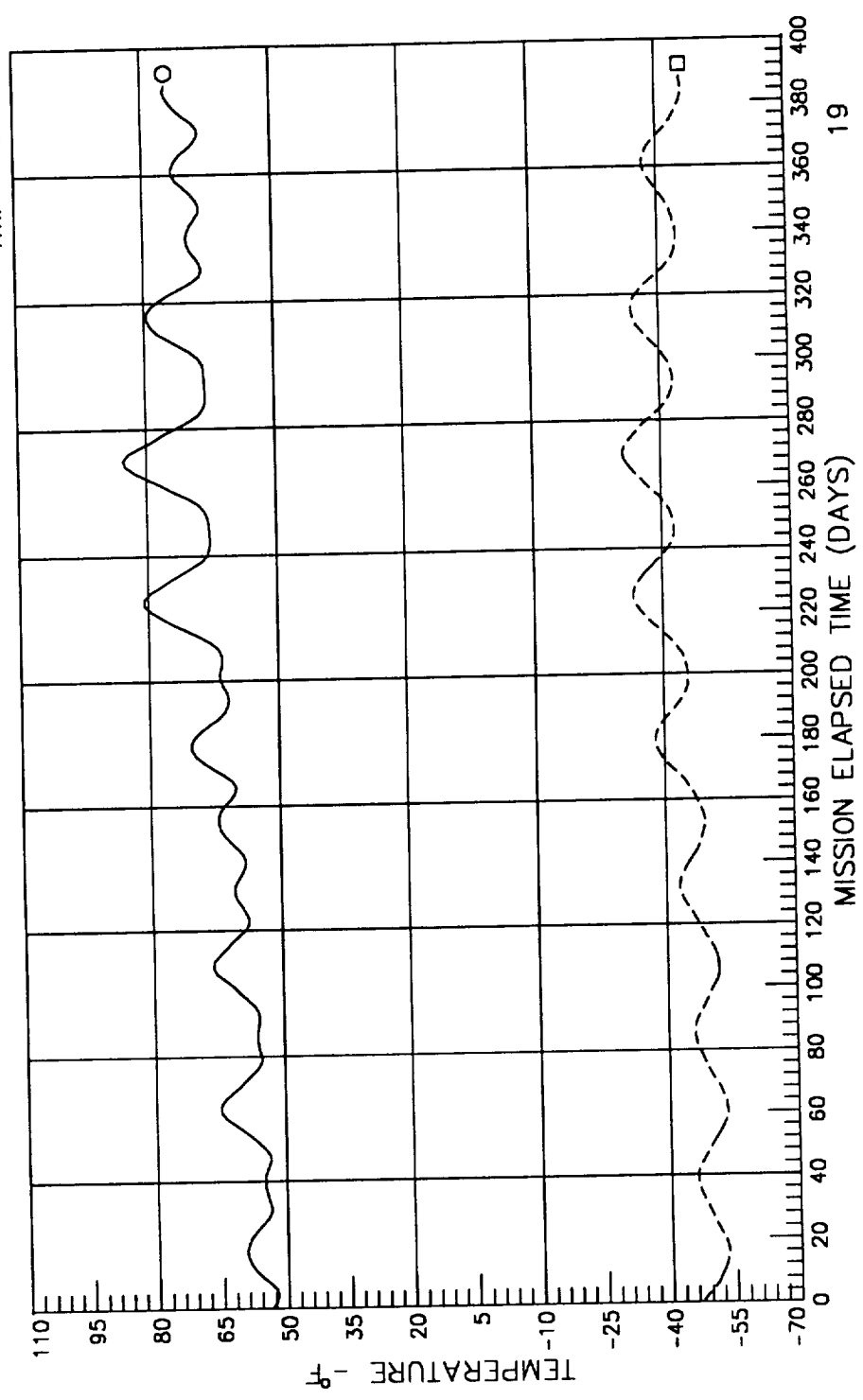
63 TRAY  
 153 SURFACE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85 LOCATION: A4

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 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 4 TRAY  
 □ - - - - 94 SURFACE

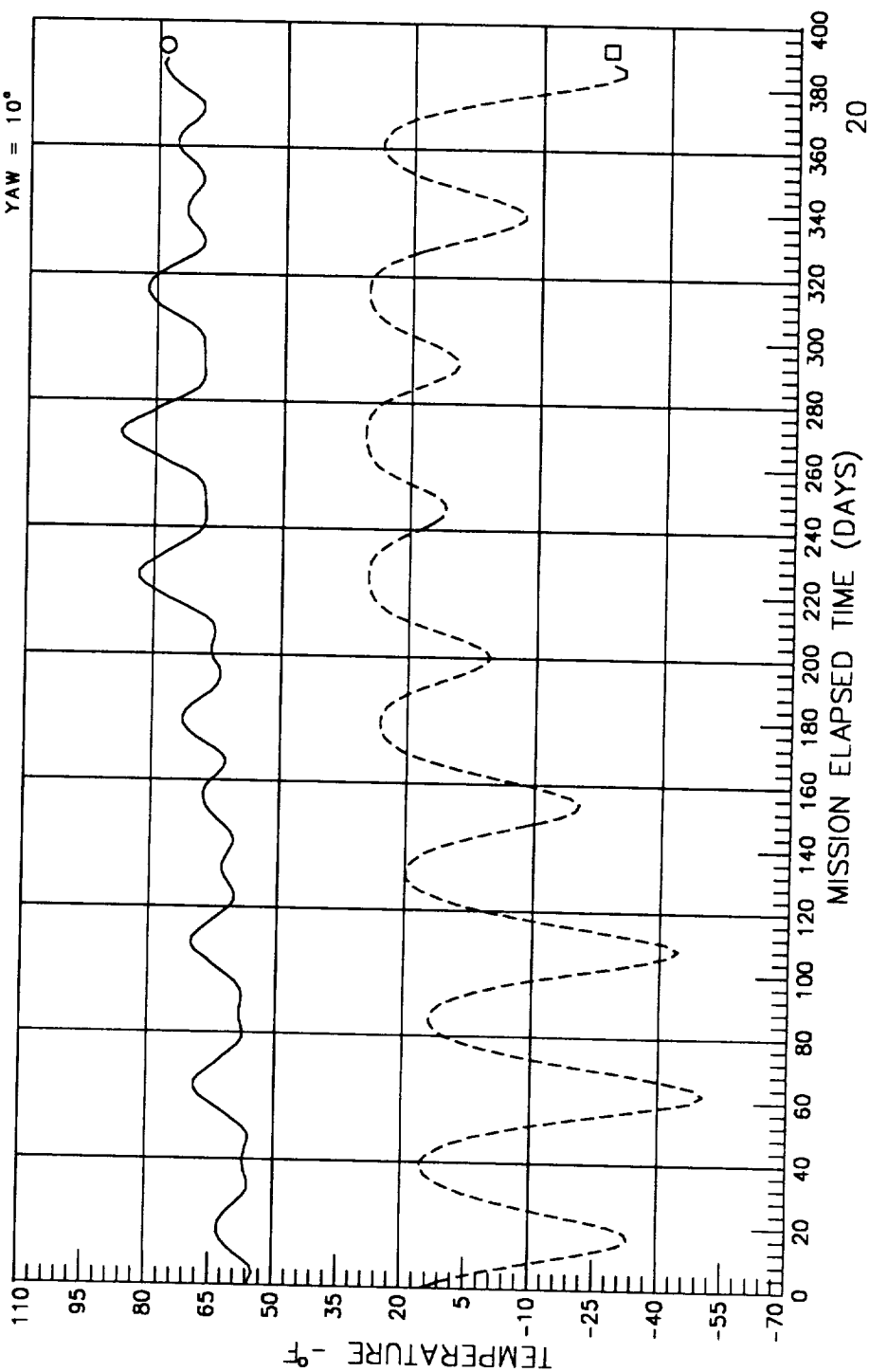


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: B4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ — 16 TRAY  
□ - - - 106 SURFACE

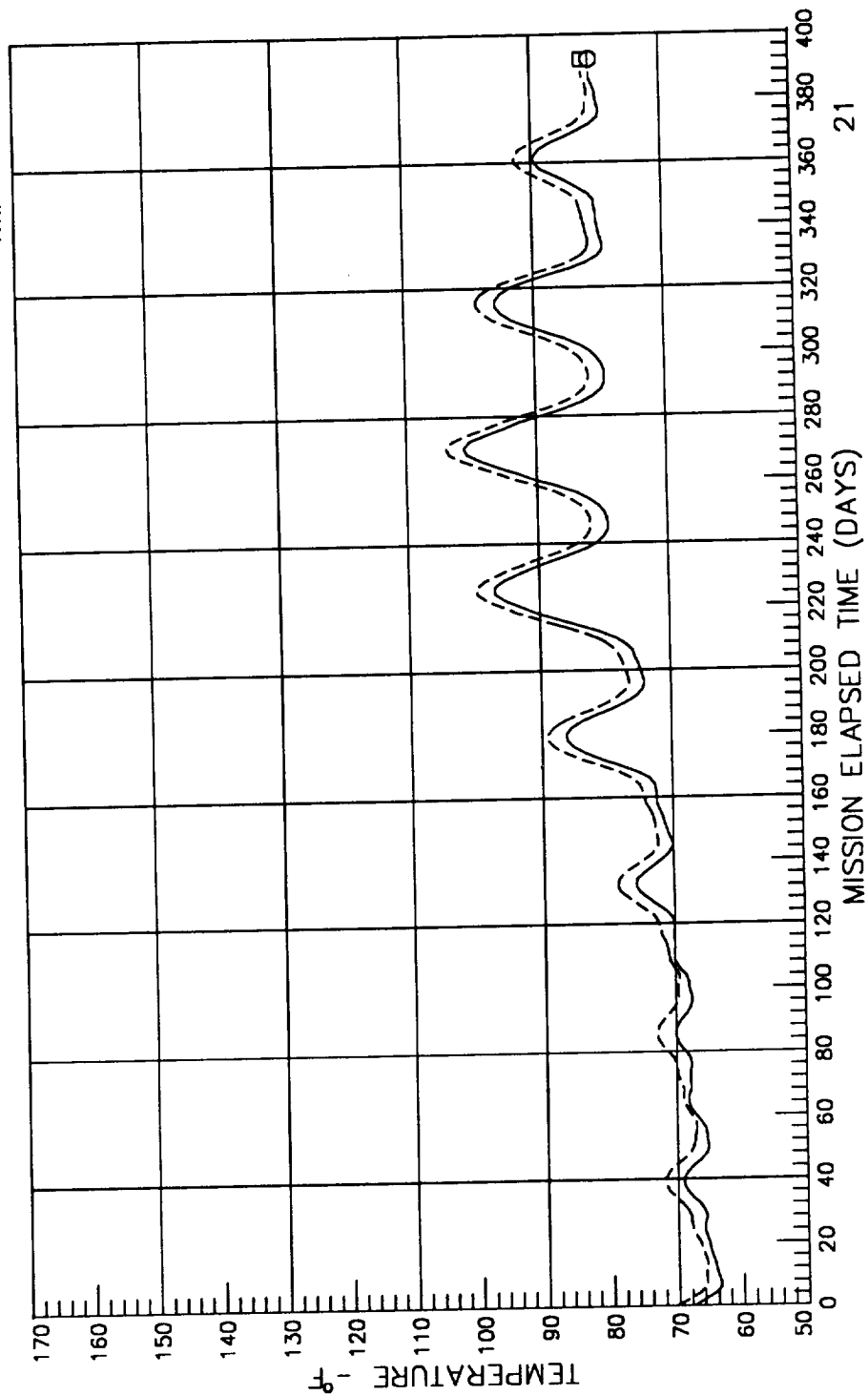


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: C4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ ——— 28 TRAY  
□ - - - - 118 SURFACE



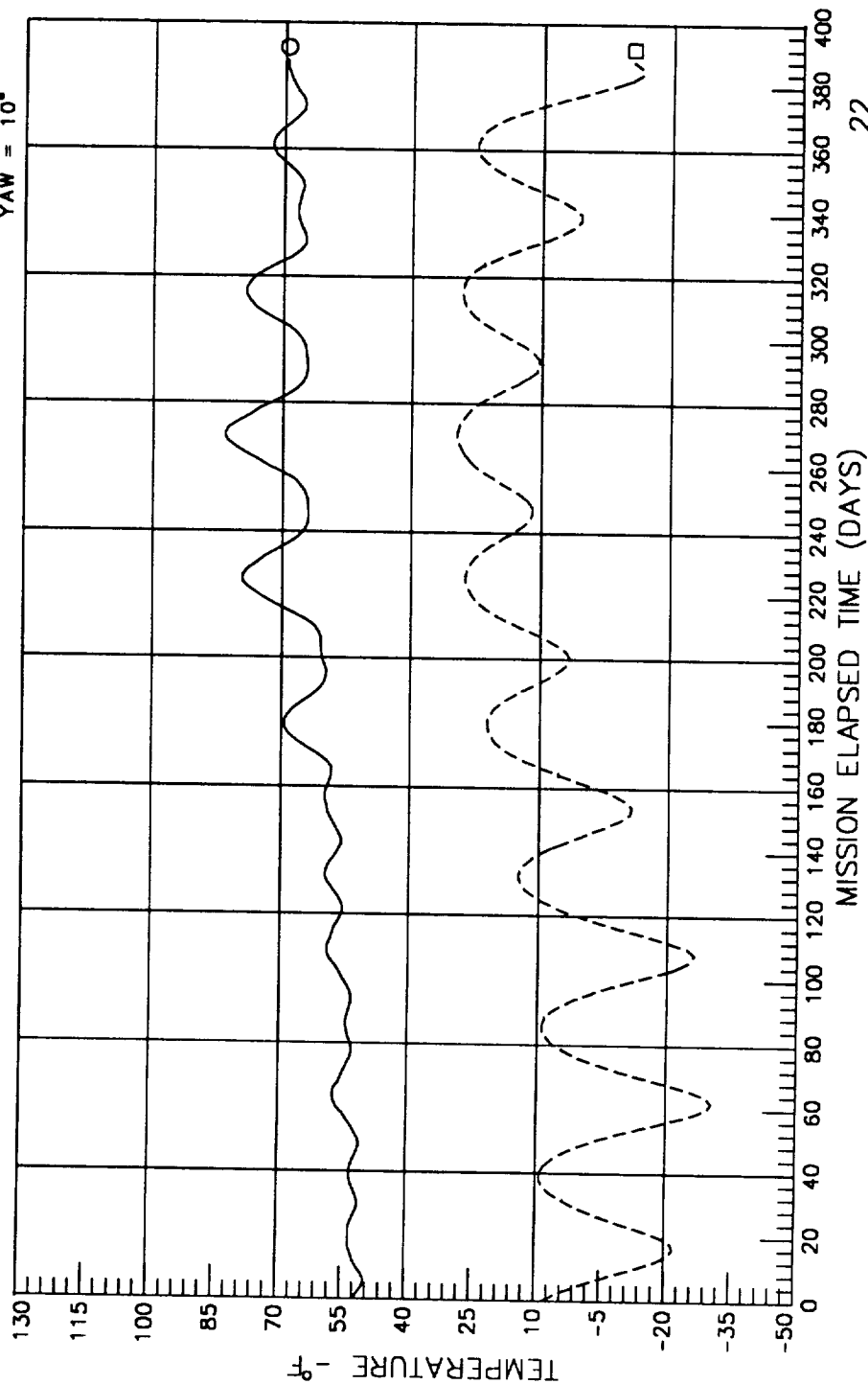
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: D4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 40 TRAY  
 □ 130 SURFACE

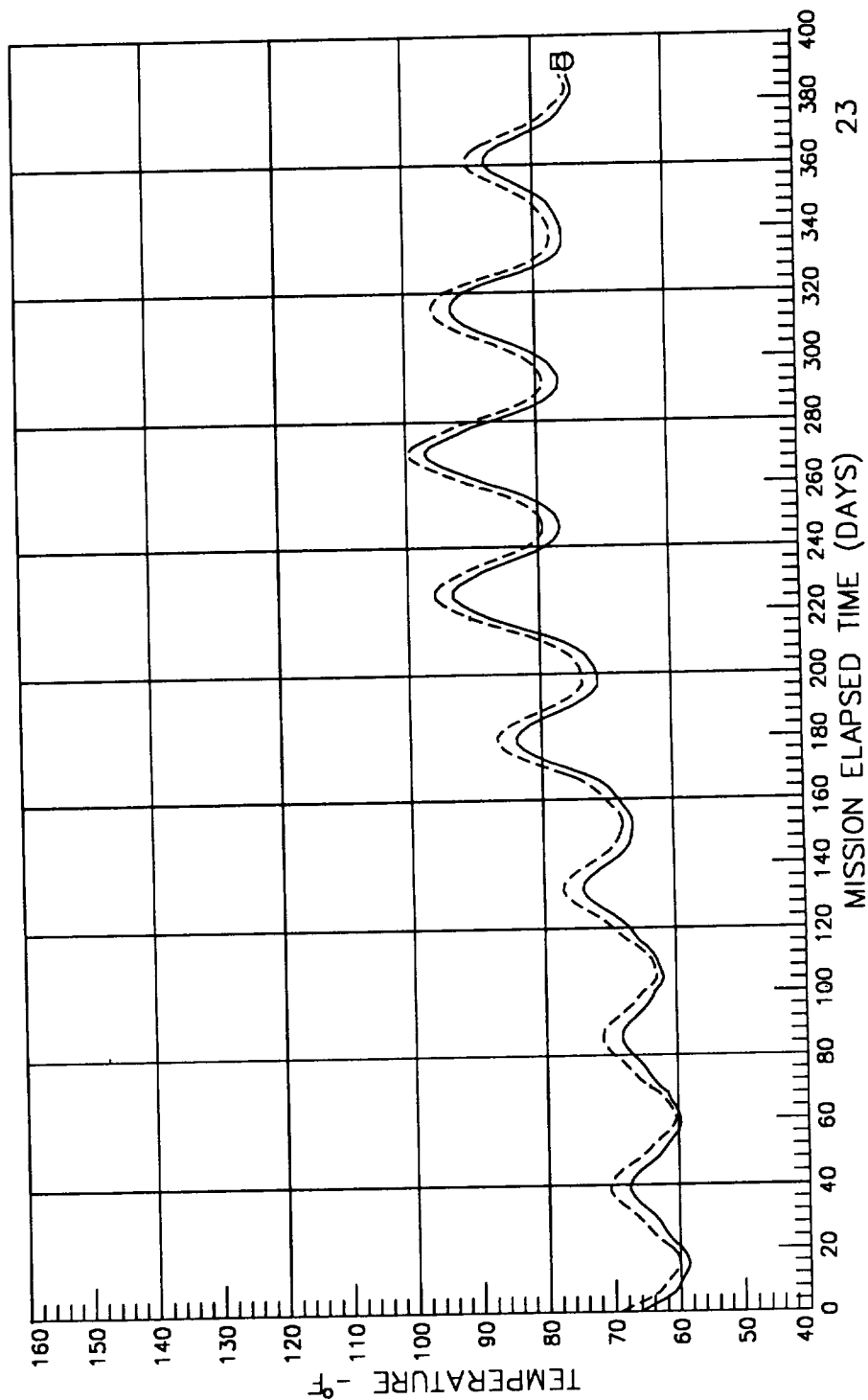


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: E4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ ——— 52 TRAY  
□ - - - - 142 SURFACE



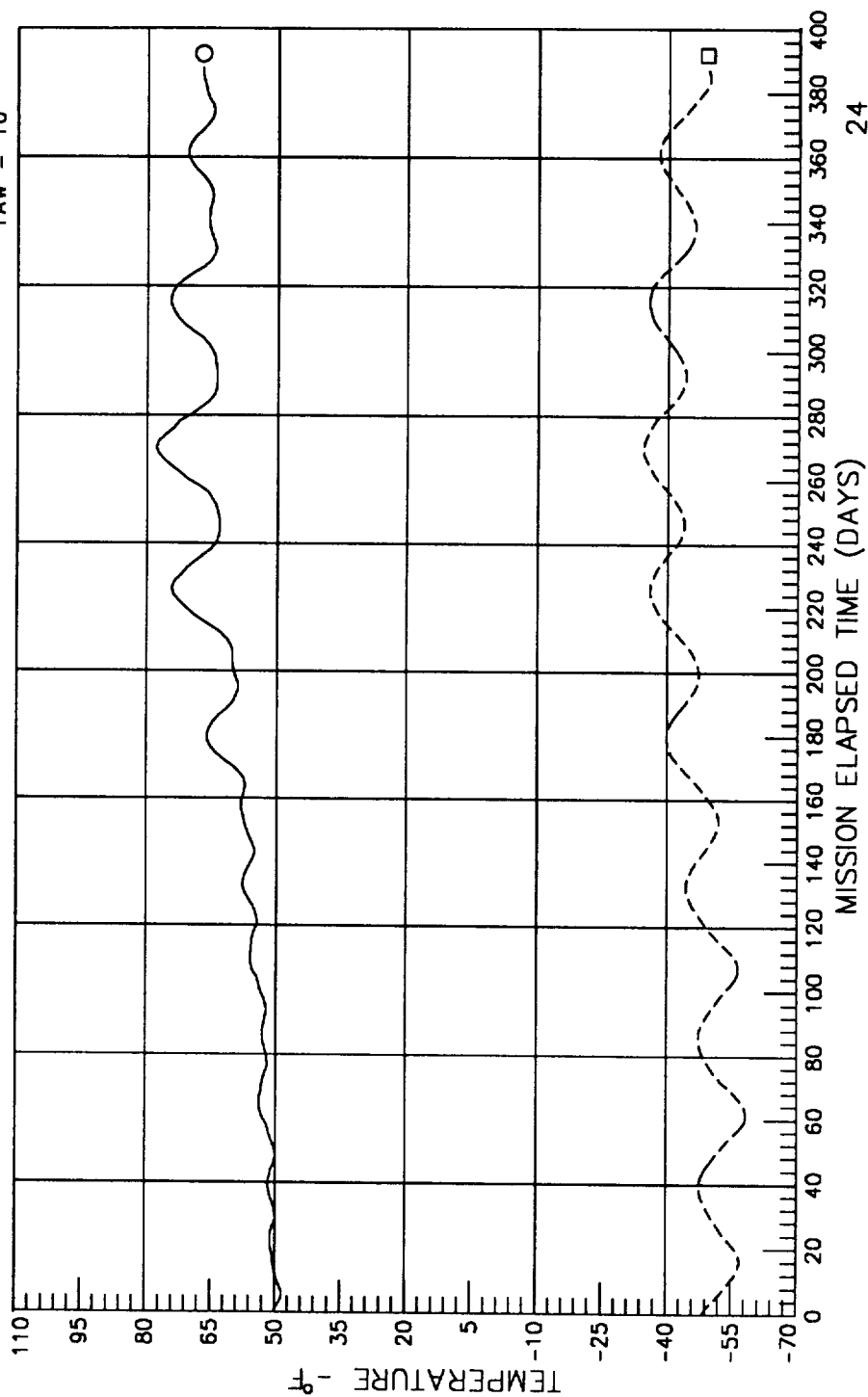
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: F4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 64 TRAY  
 □ 154 SURFACE





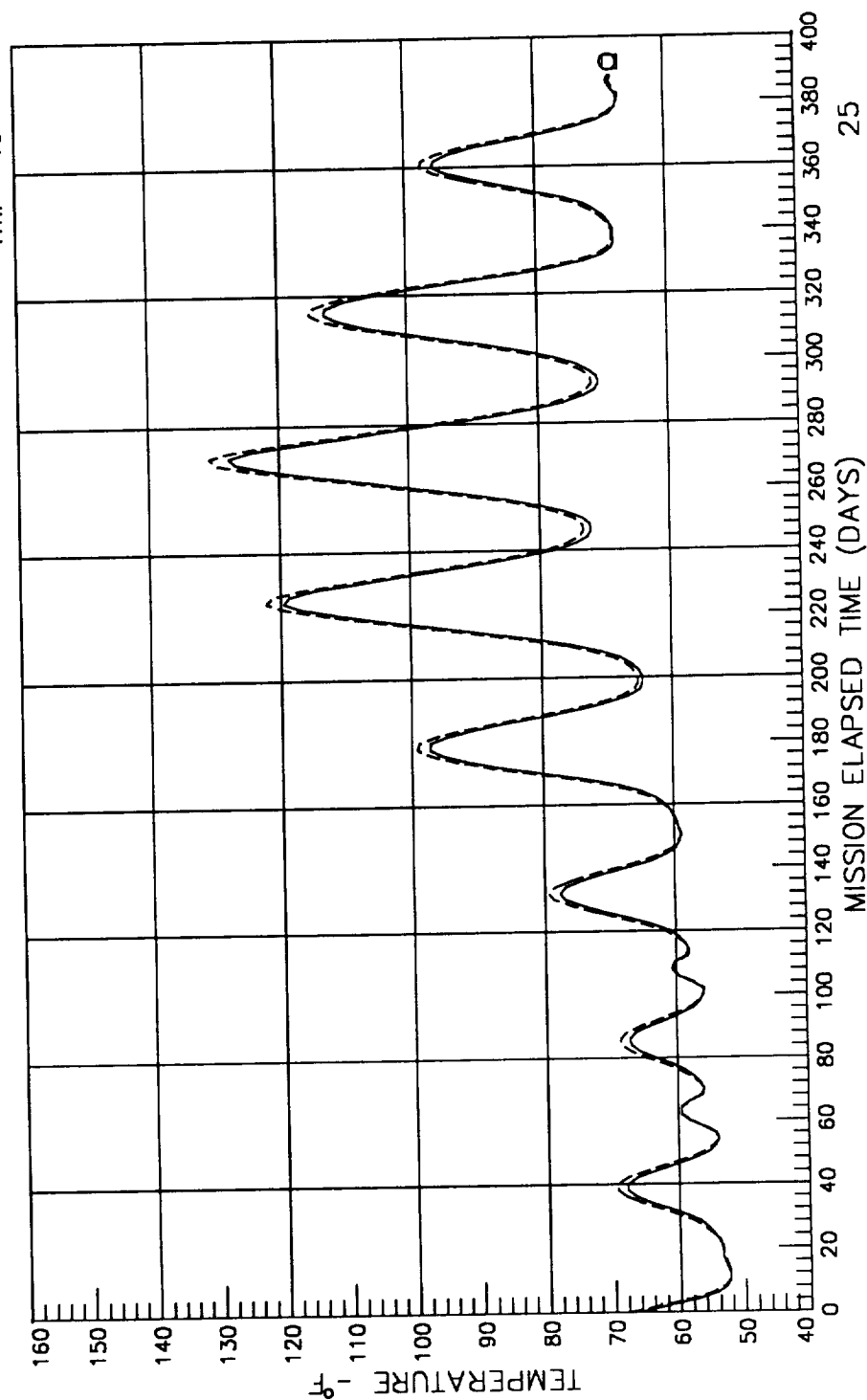
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: A5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 5 TRAY  
 □ 95 SURFACE



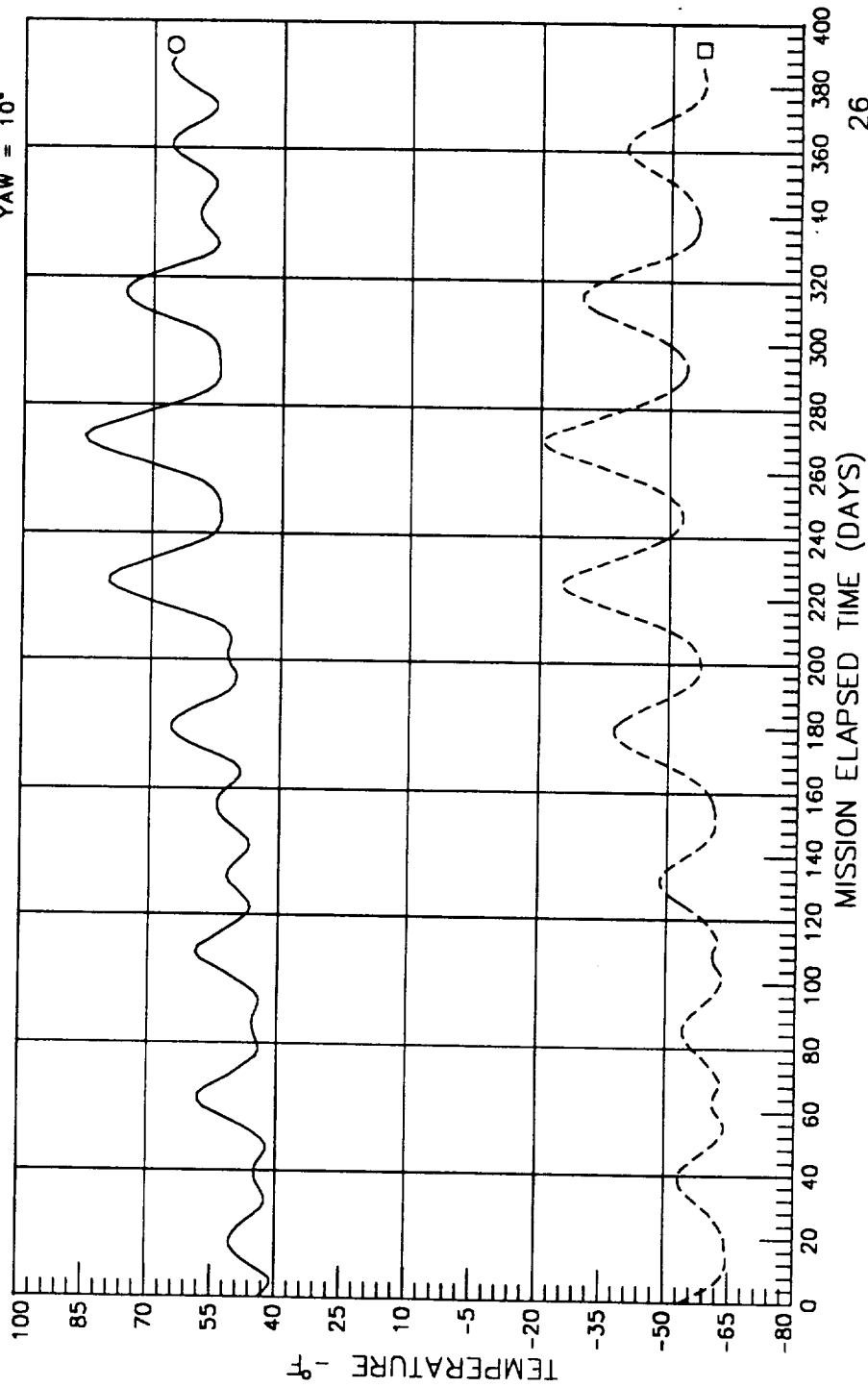
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: B5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 17 TRAY  
 □ 107 SURFACE



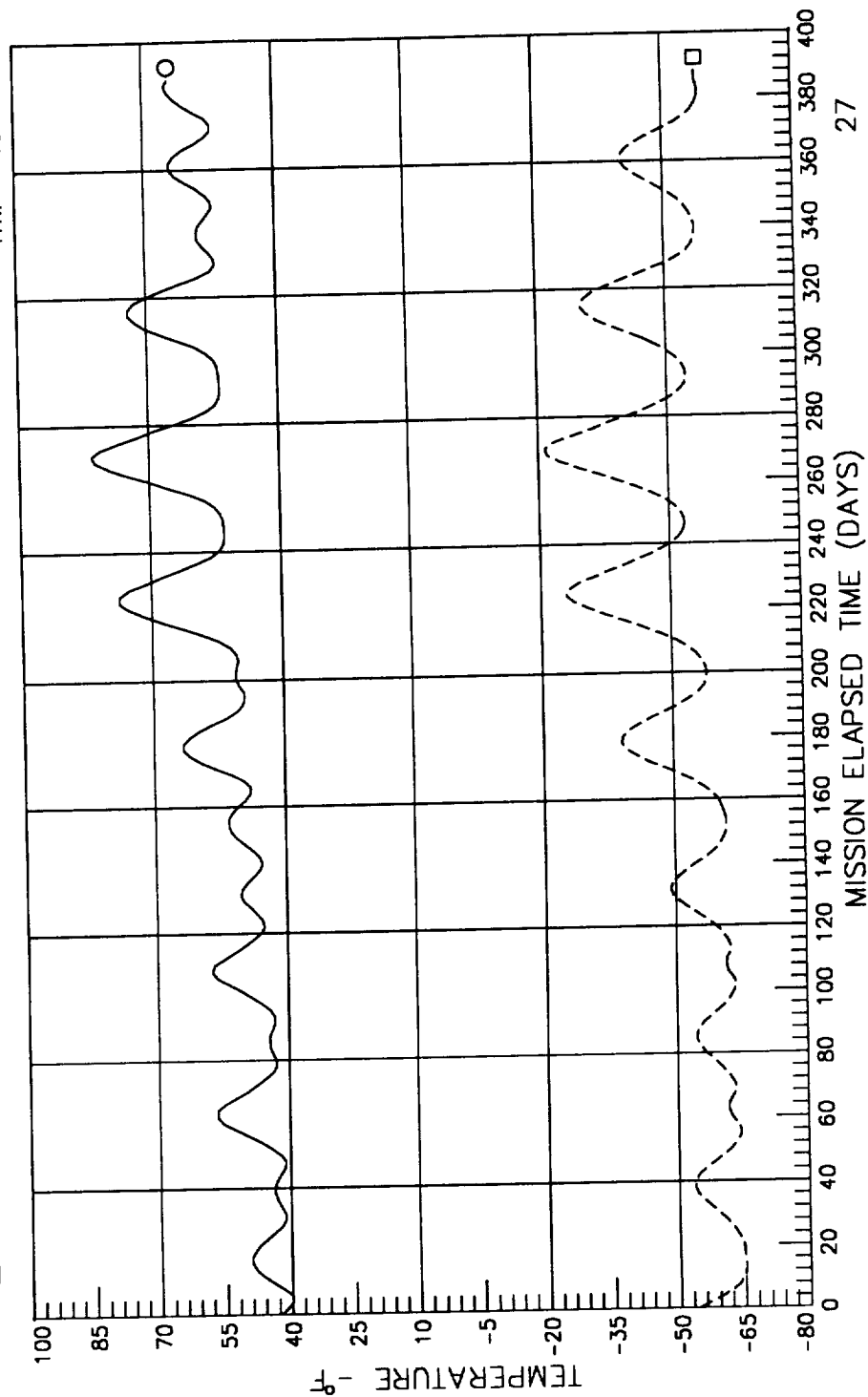
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: C5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 29 TRAY  
 □ - - - 119 SURFACE



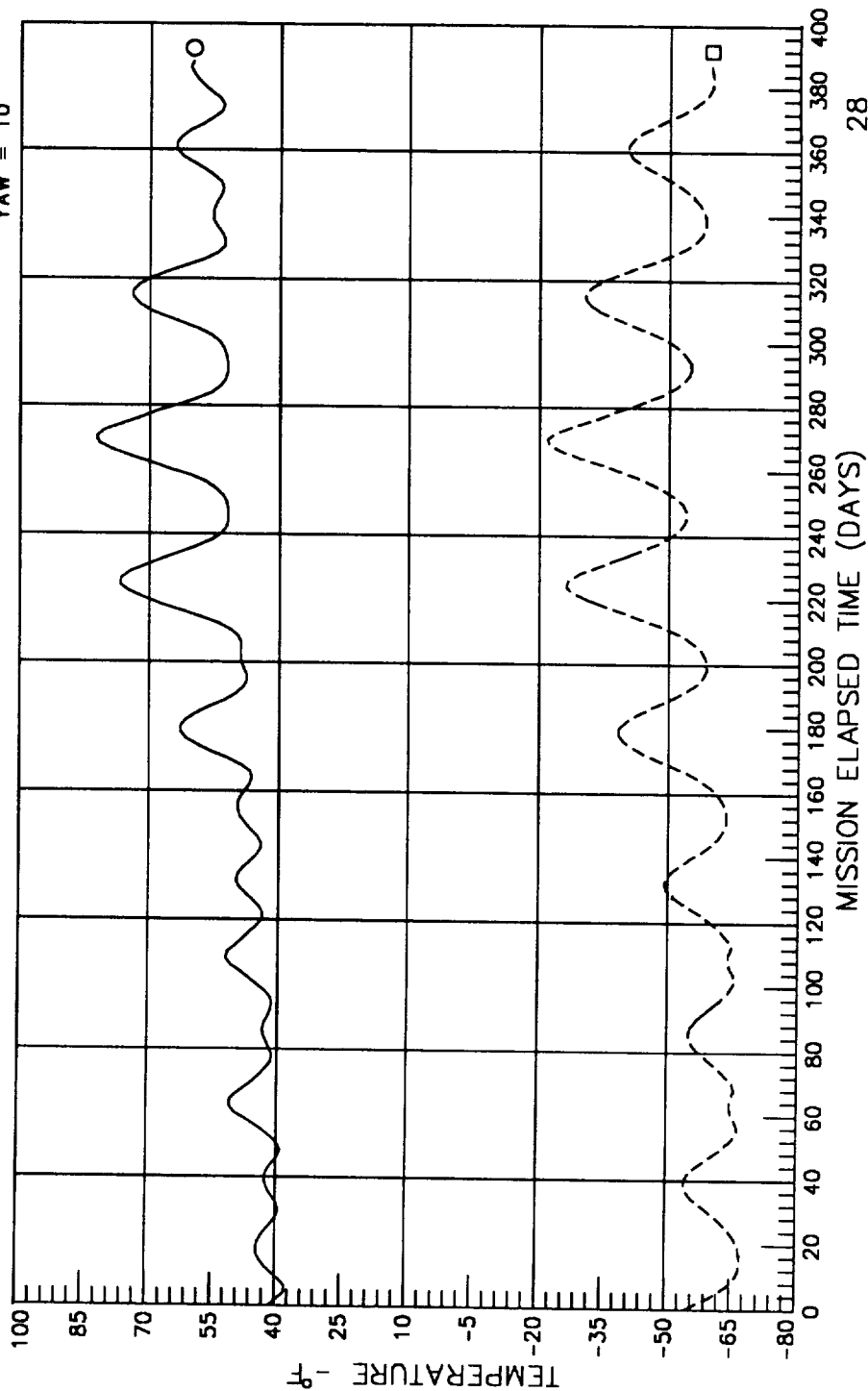
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: D5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 41 TRAY  
 □ - - - - 131 SURFACE



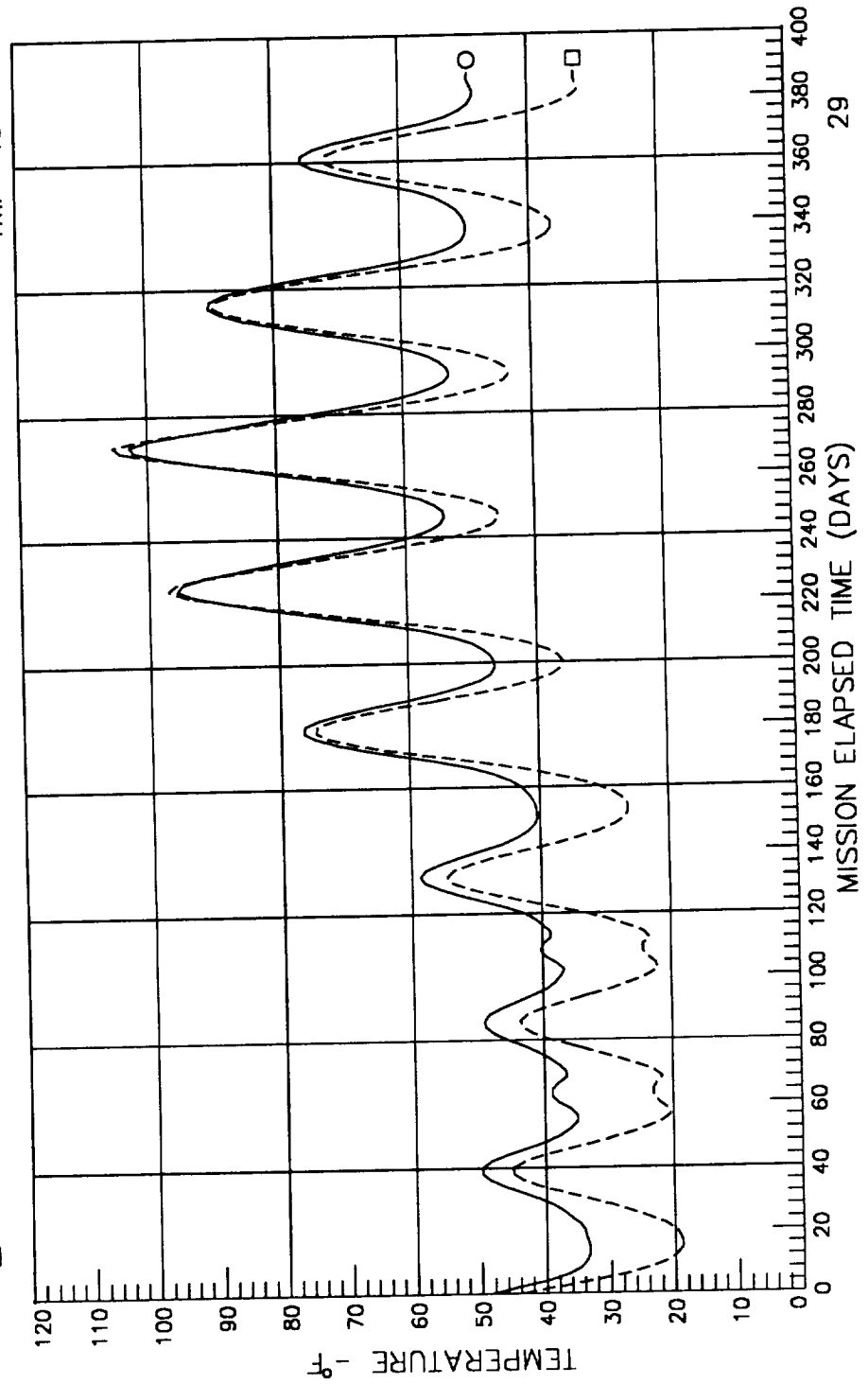
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: E5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 53 TRAY  
 □ - - - 143 SURFACE



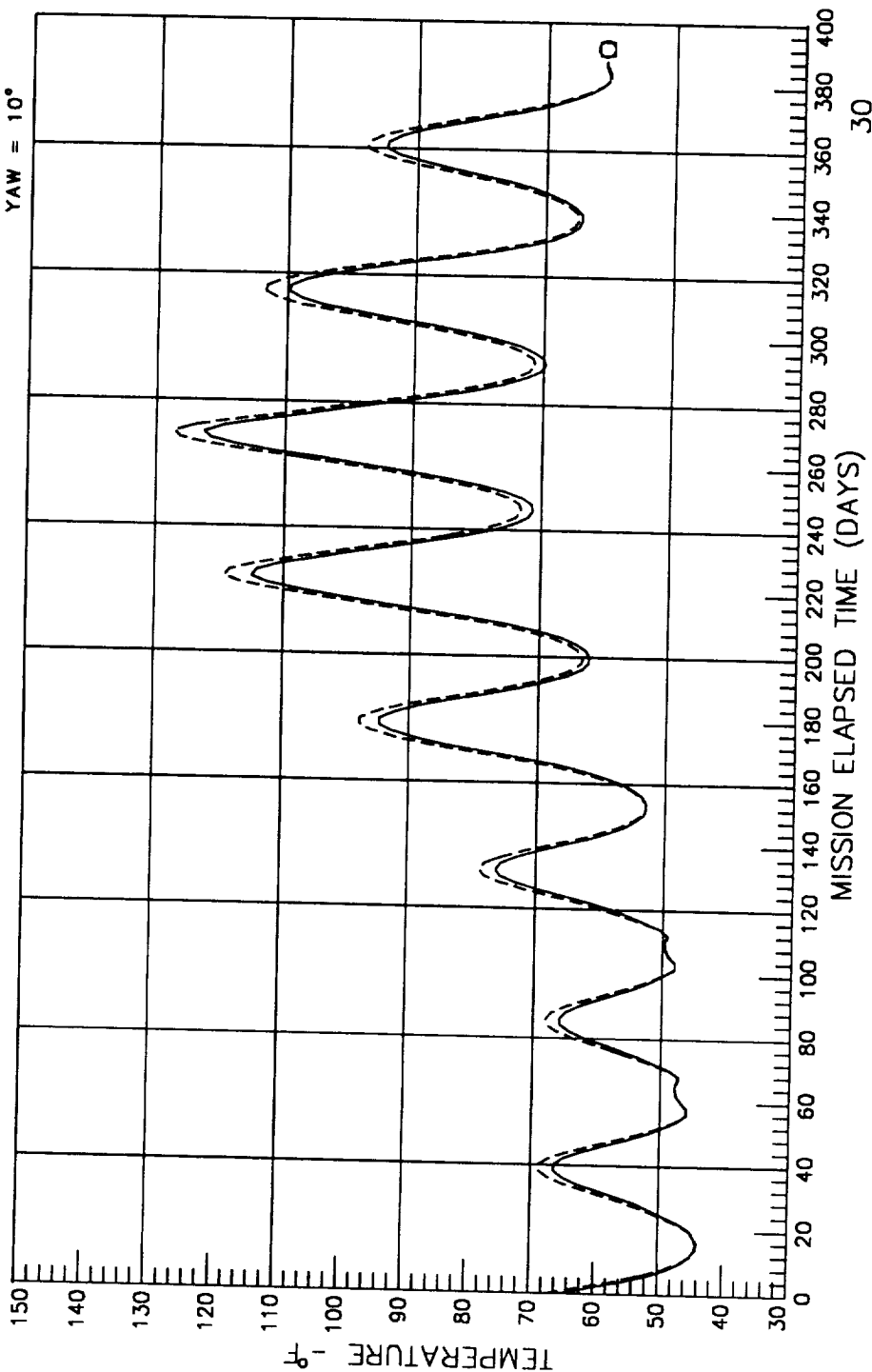
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: F5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 65 TRAY  
 □ - - - - 155 SURFACE



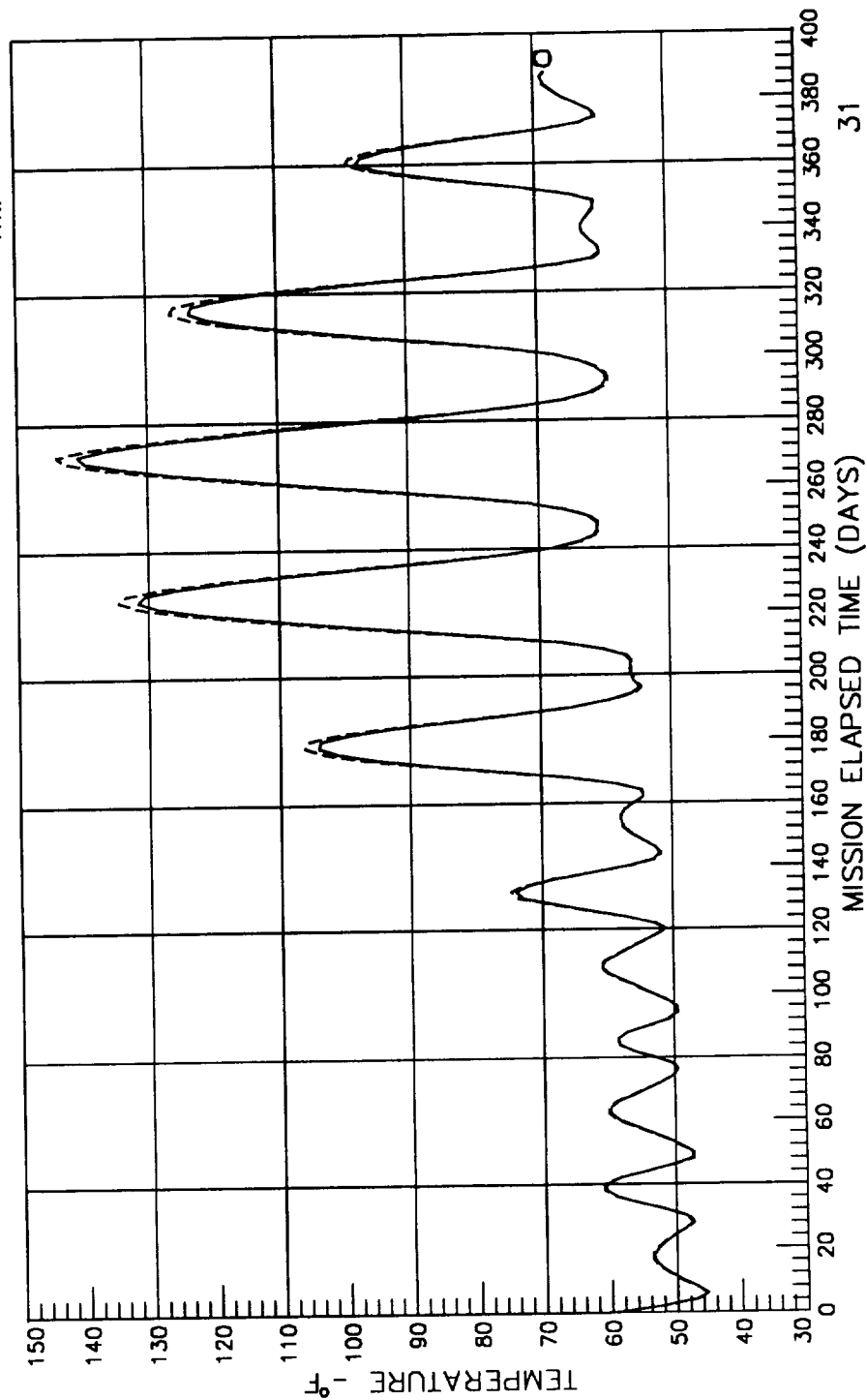
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: A6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 6 TRAY  
 □ - - - - 96 SURFACE

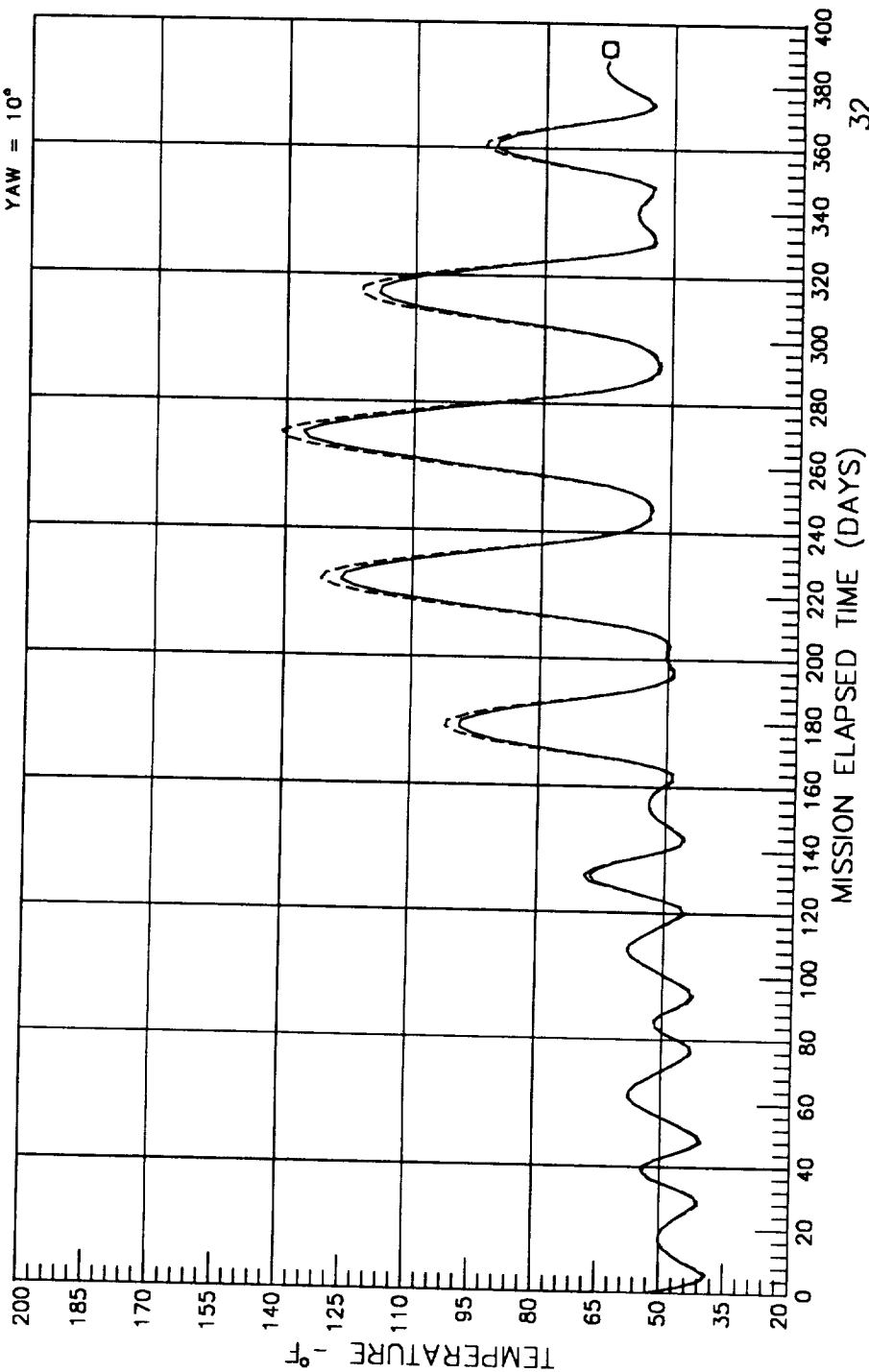


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: B6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ — 18 TRAY  
□ - - - 108 SURFACE





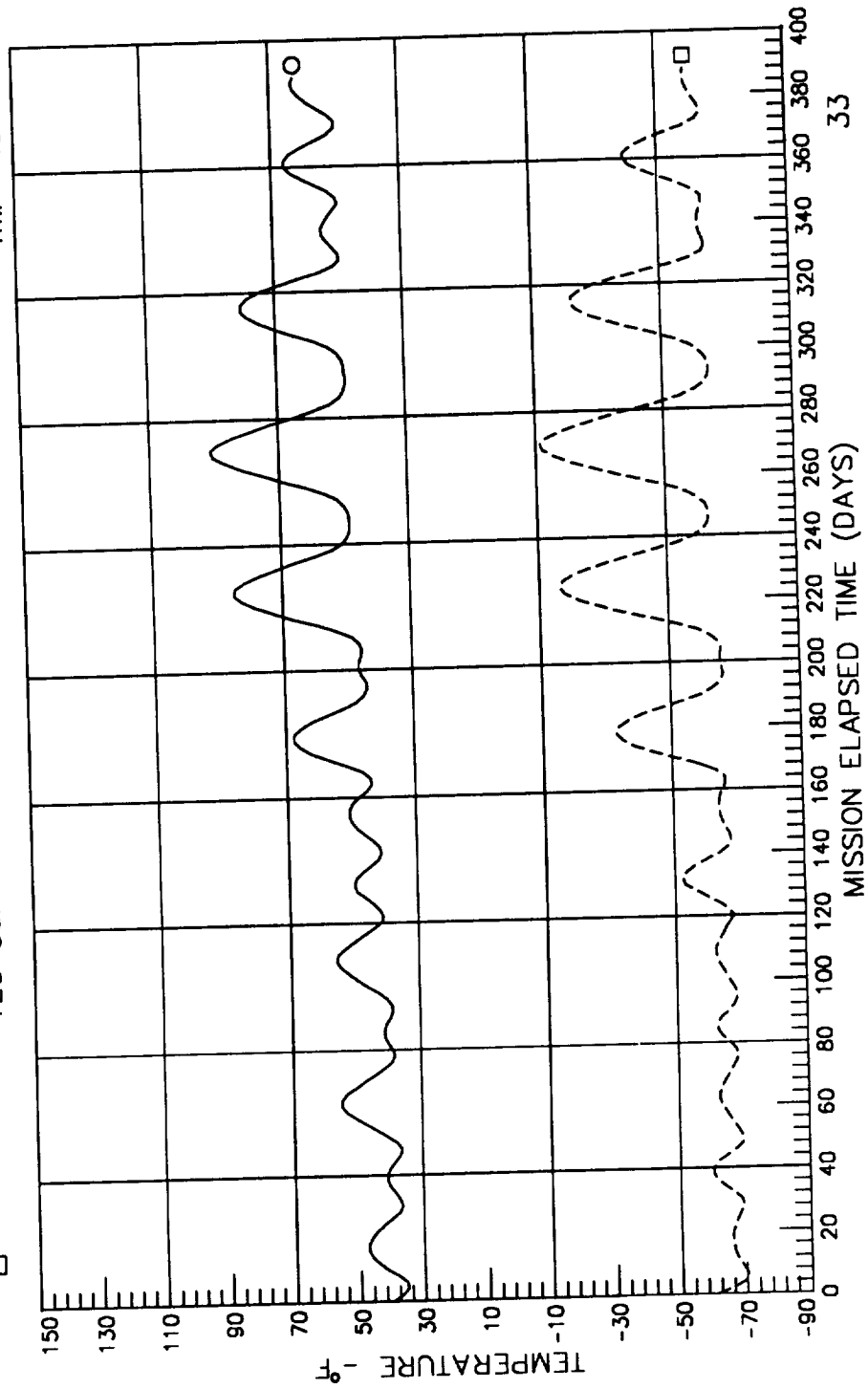
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: C6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

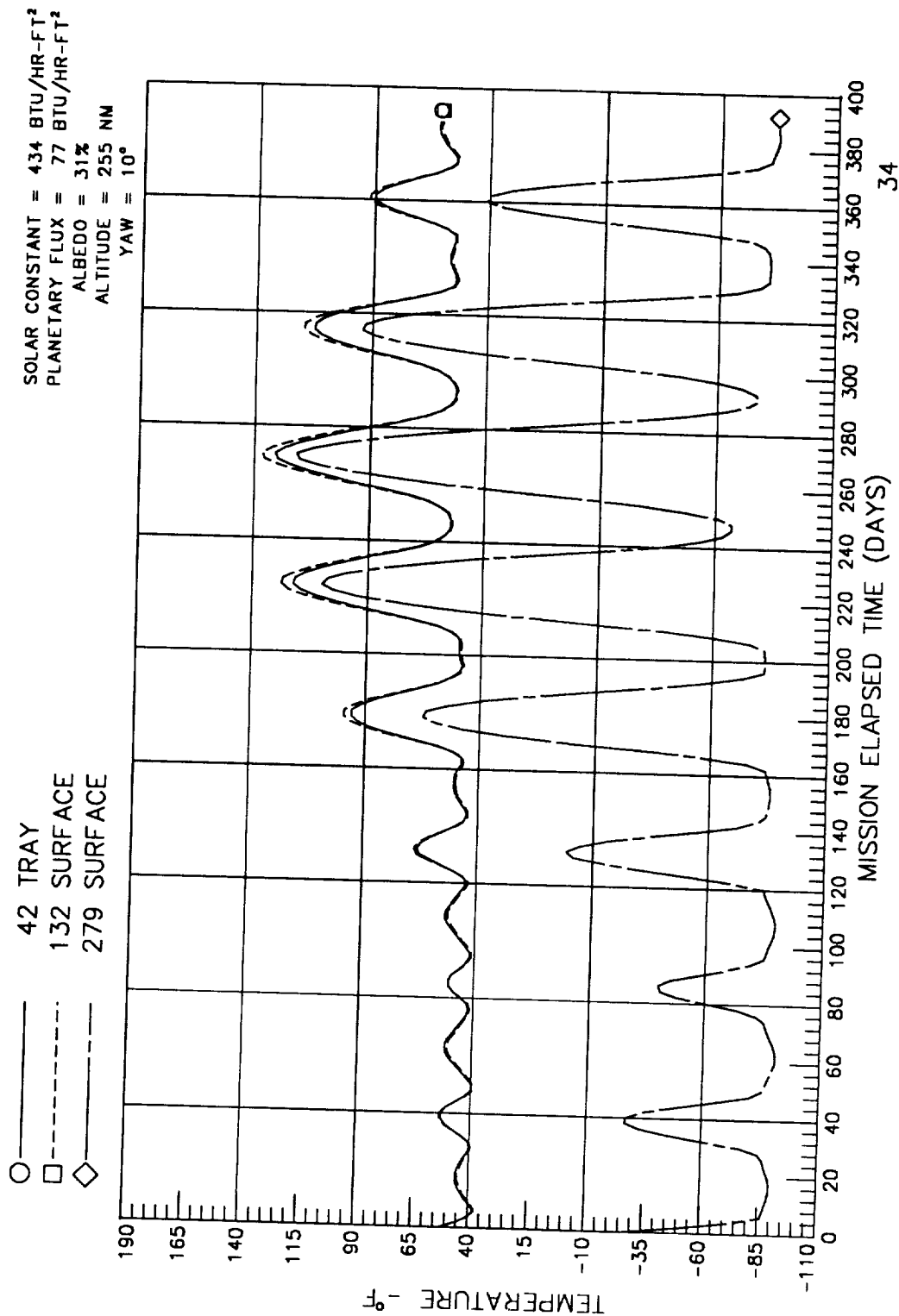
○ ——— 30 TRAY  
 □ - - - - 120 SURFACE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: D6



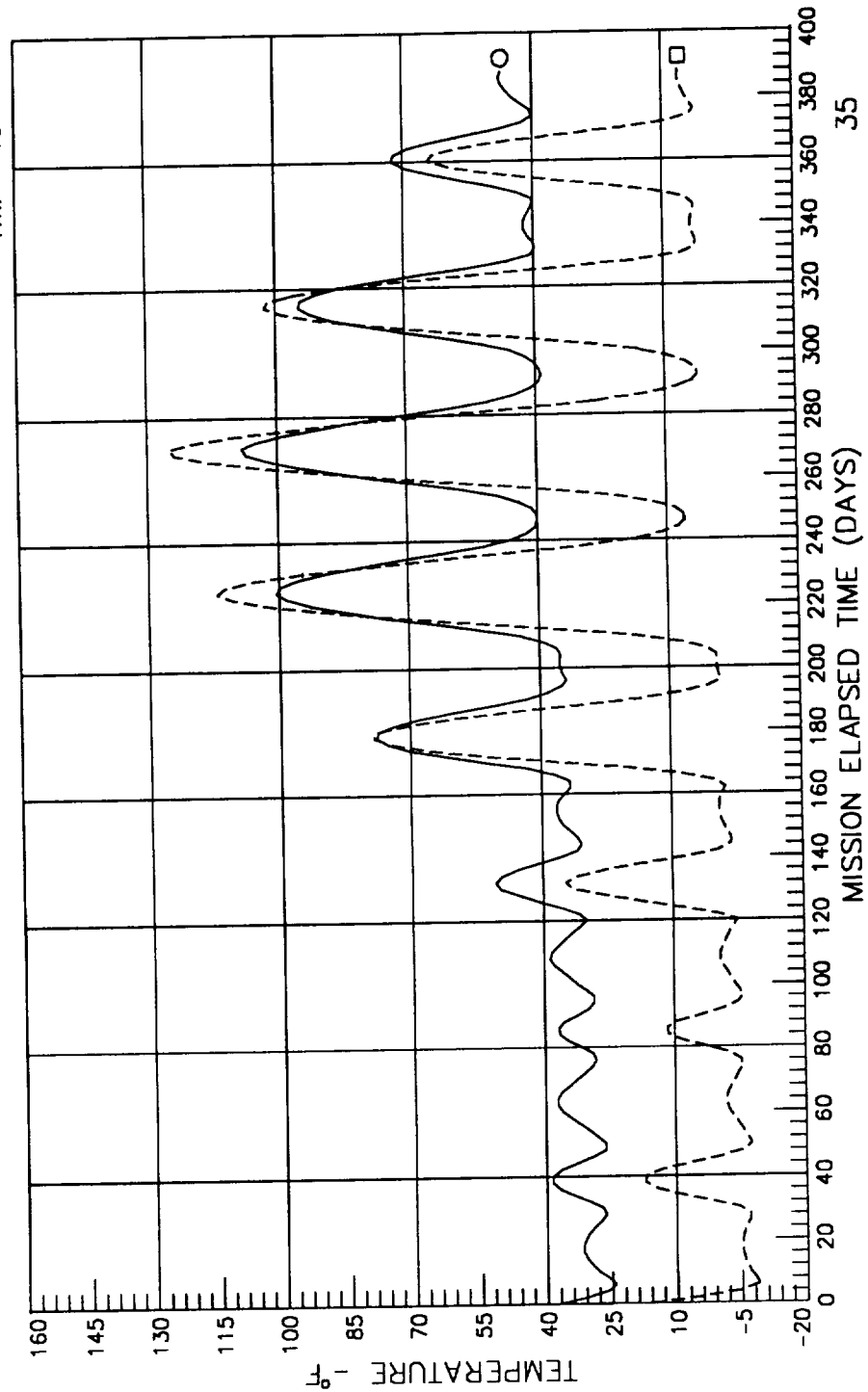
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: E6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 54 TRAY  
 □ 144 SURFACE



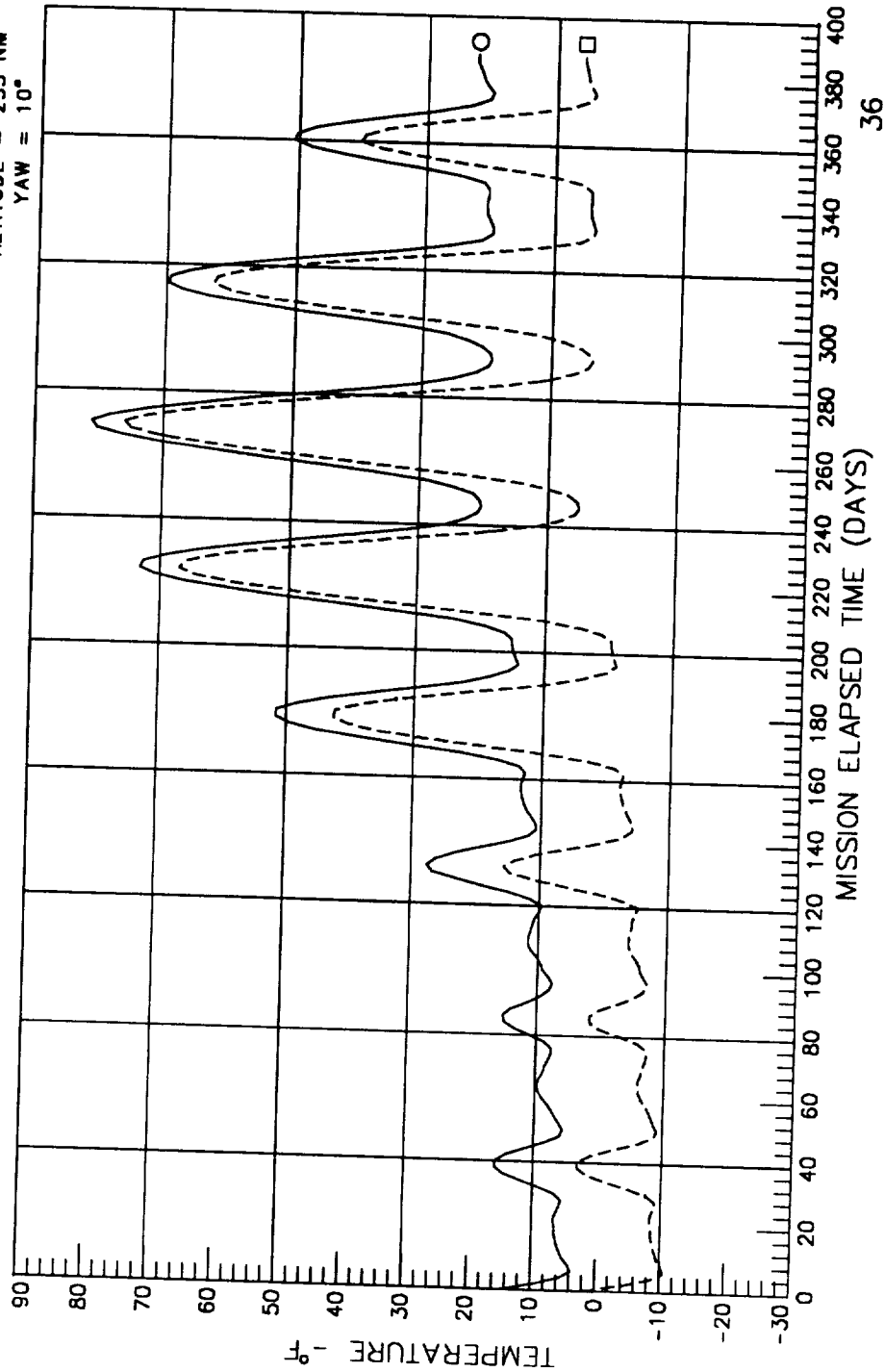
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: F6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 66 TRAY  
 □ - - - 156 SURFACE



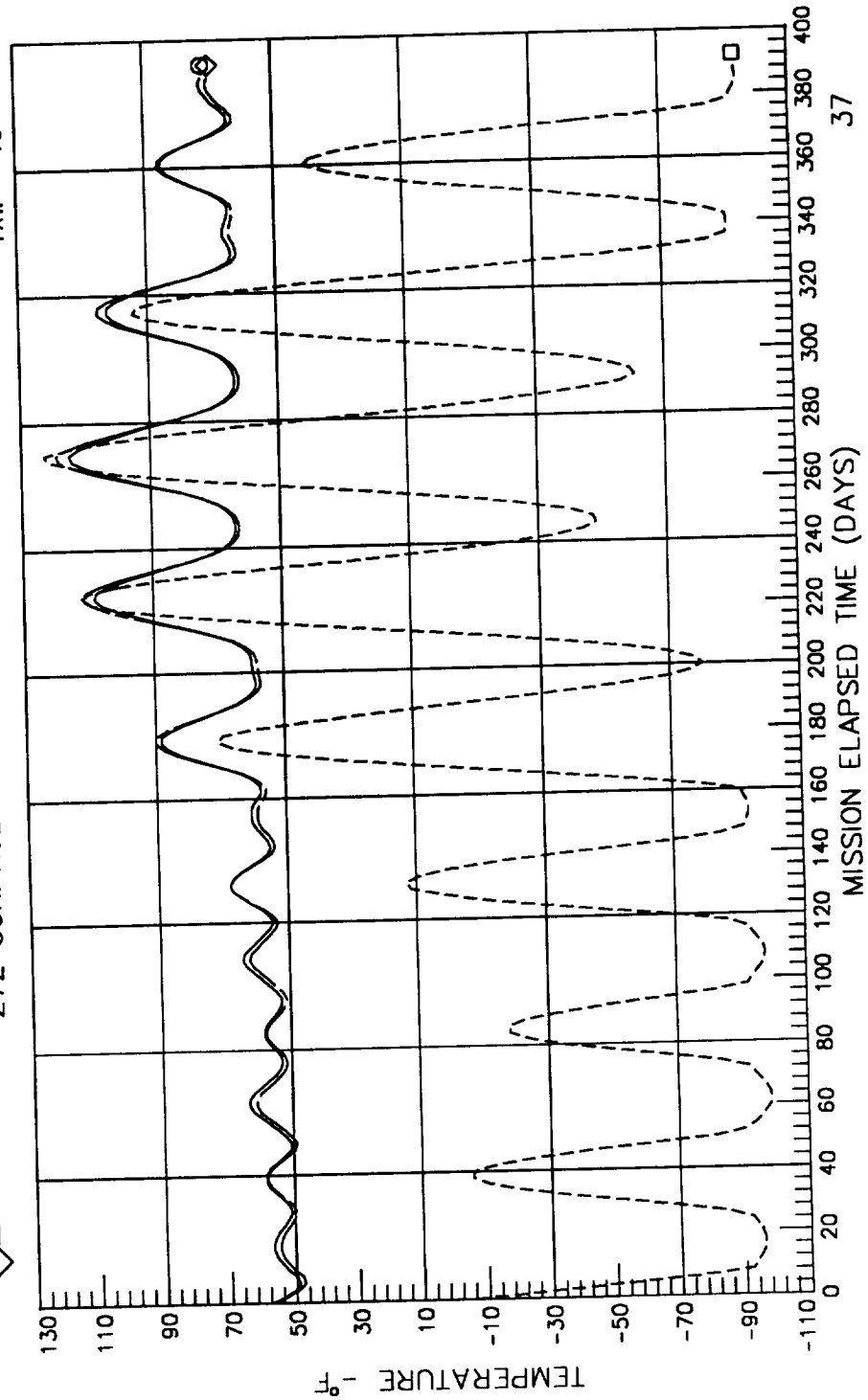
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: A7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 7 TRAY  
 □ 97 SURFACE  
 ◇ 272 SURFACE



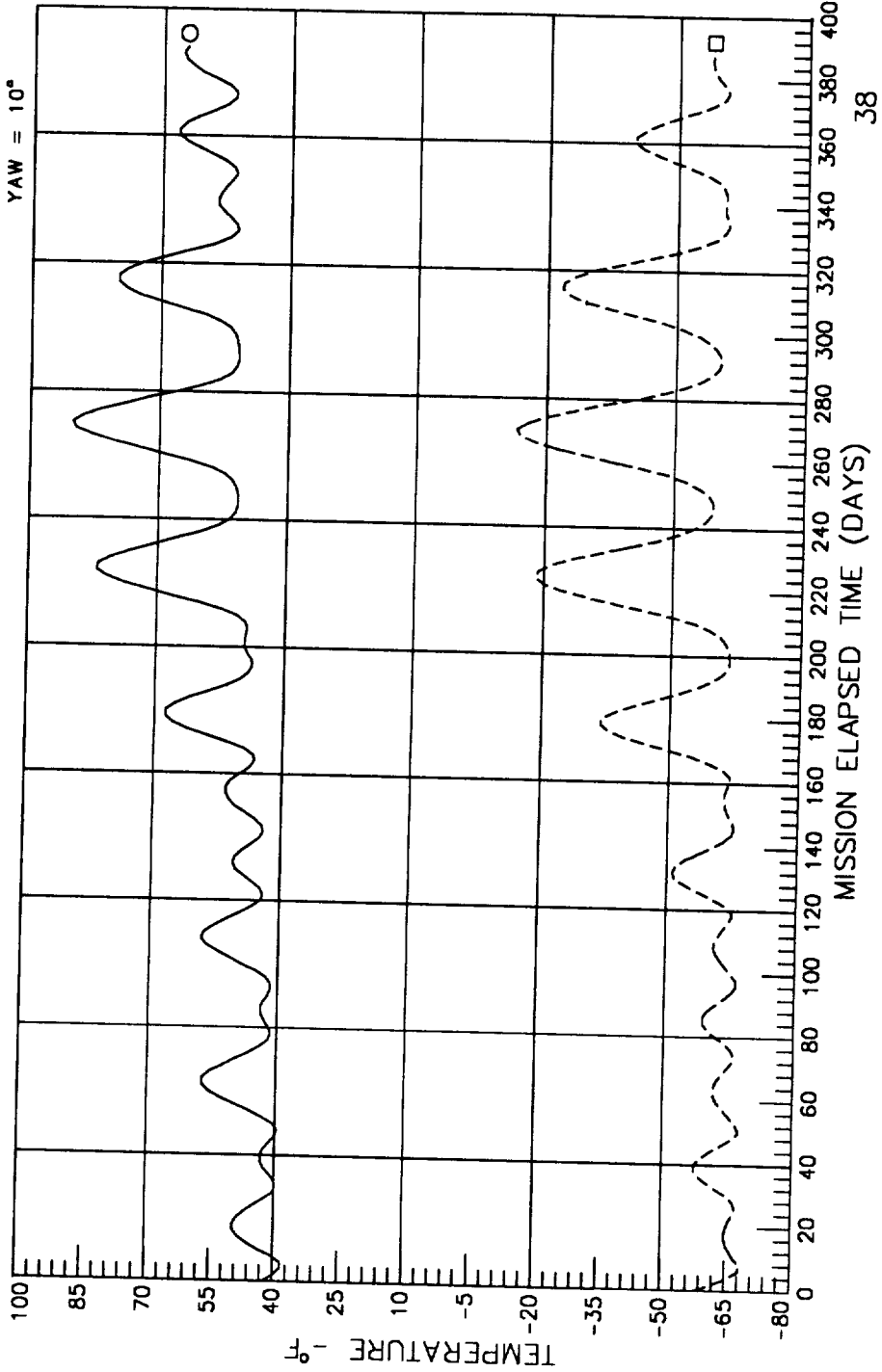
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: B7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 19 TRAY  
 □ - - - - 109 SURFACE

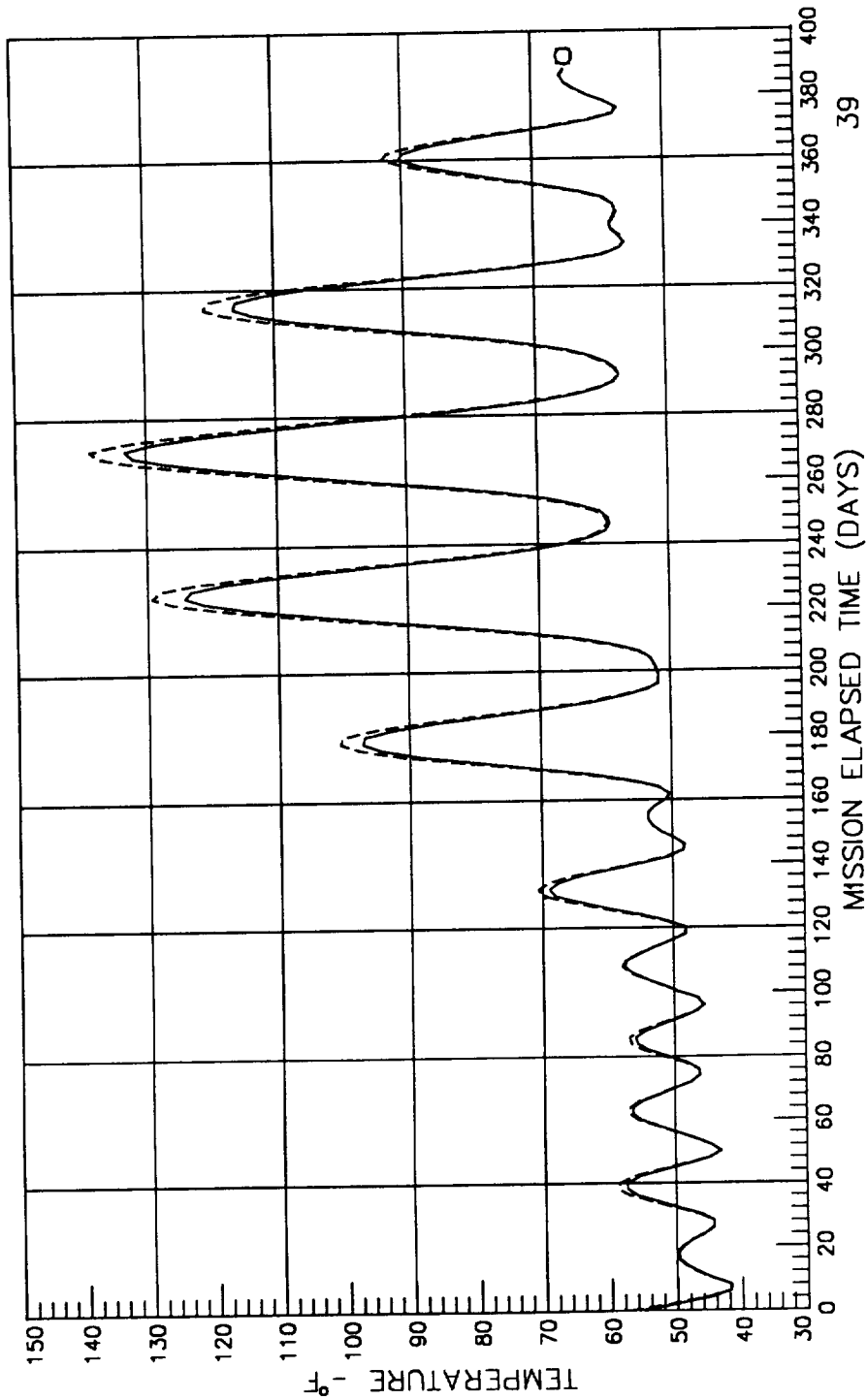


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: C7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

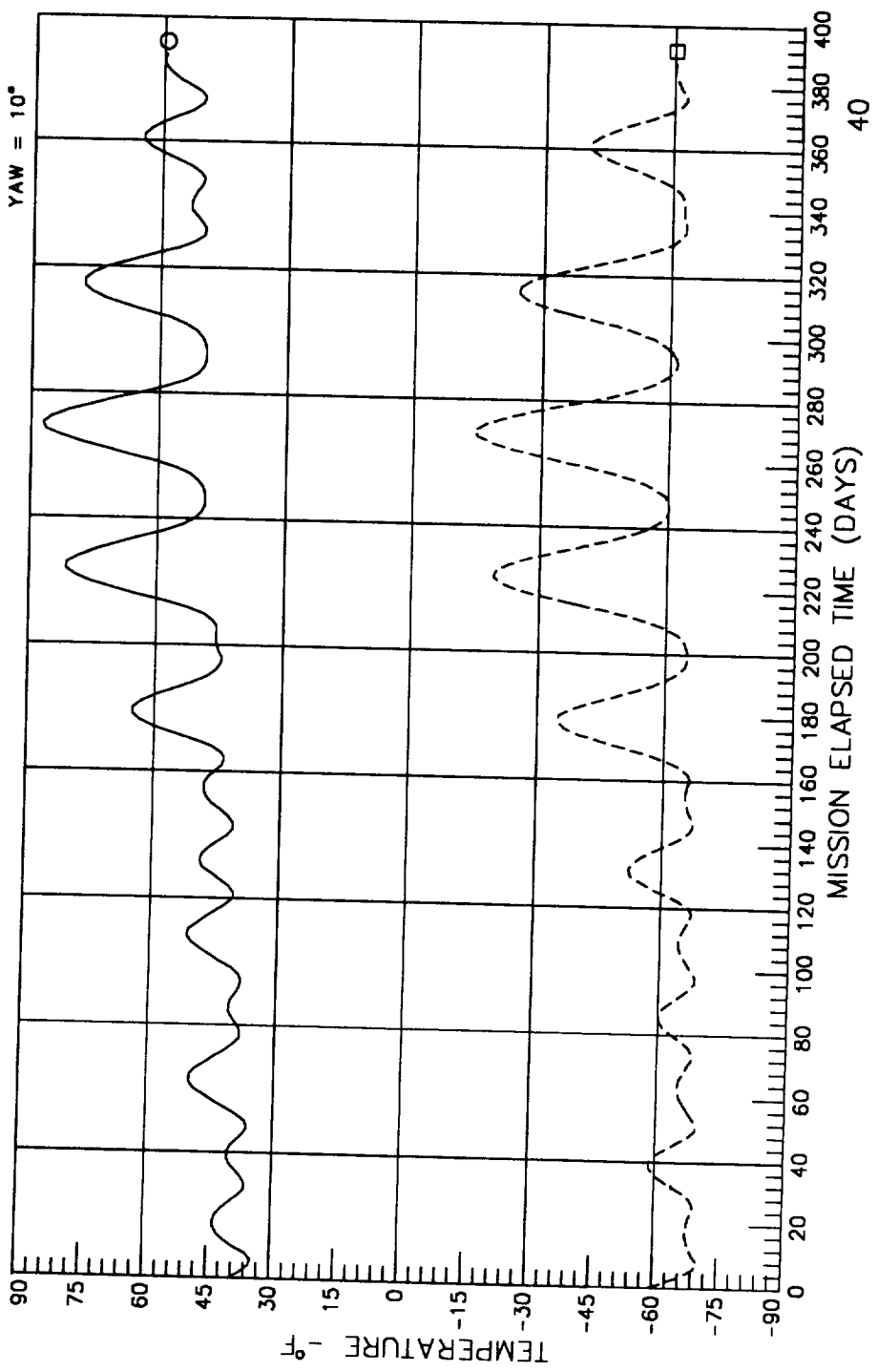
○ ——— 31 TRAY  
□ - - - - 121 SURFACE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85 LOCATION: D7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 43 TRAY  
 □ - - - - 133 SURFACE



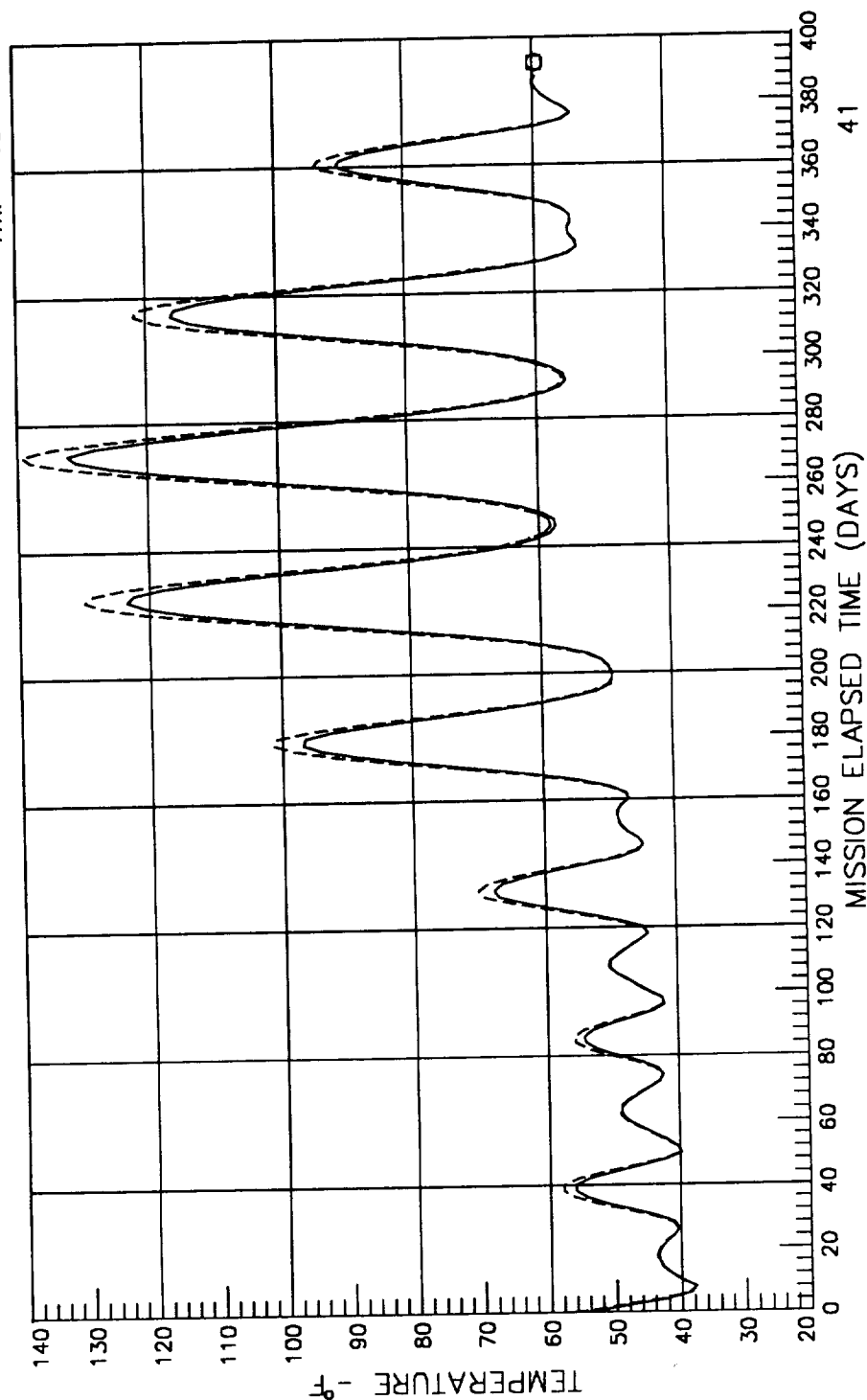


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: E7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ — 55 TRAY  
□ - - - 145 SURFACE



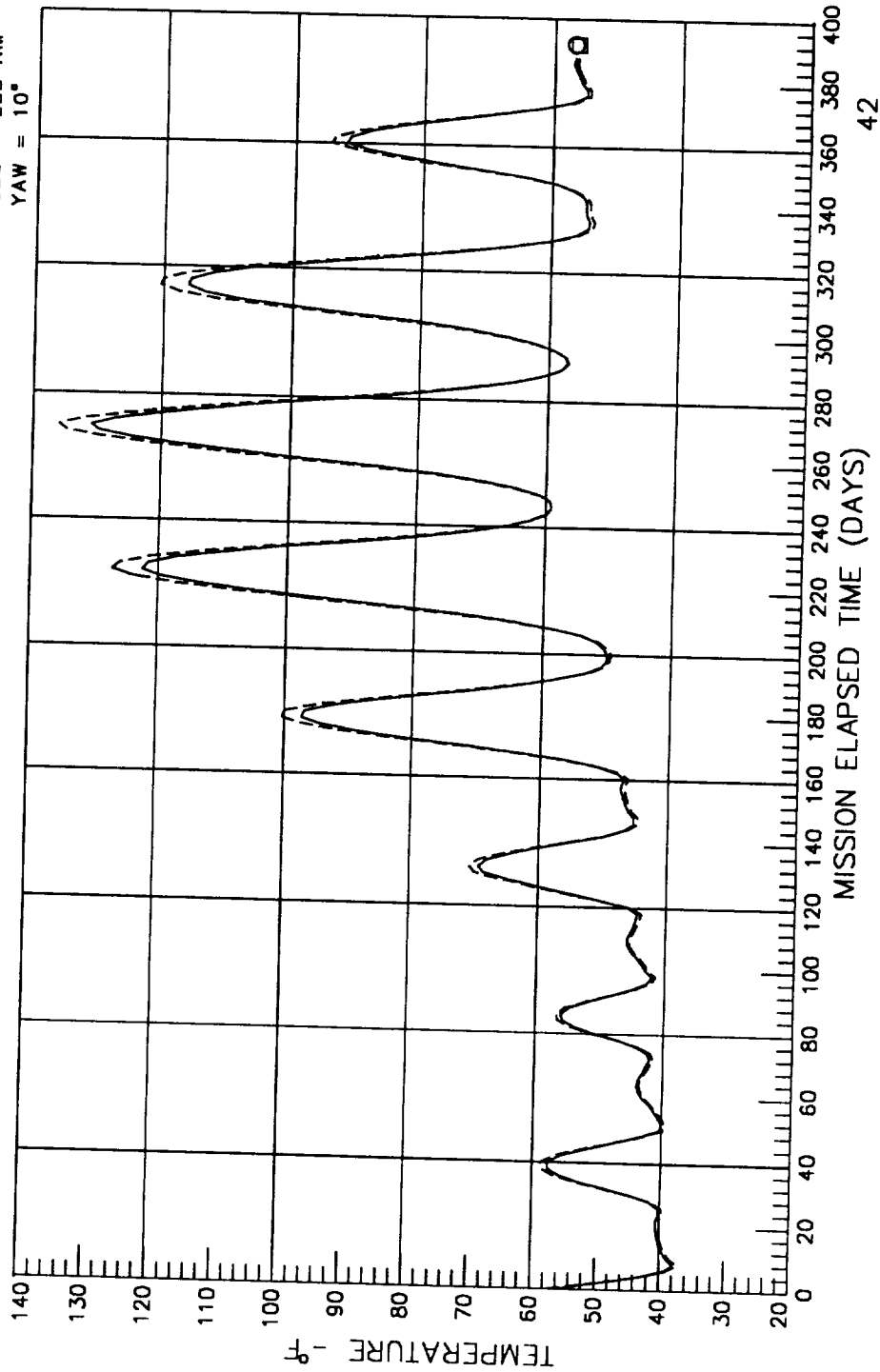
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: F7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 67 TRAY  
 □ - - - - 157 SURFACE



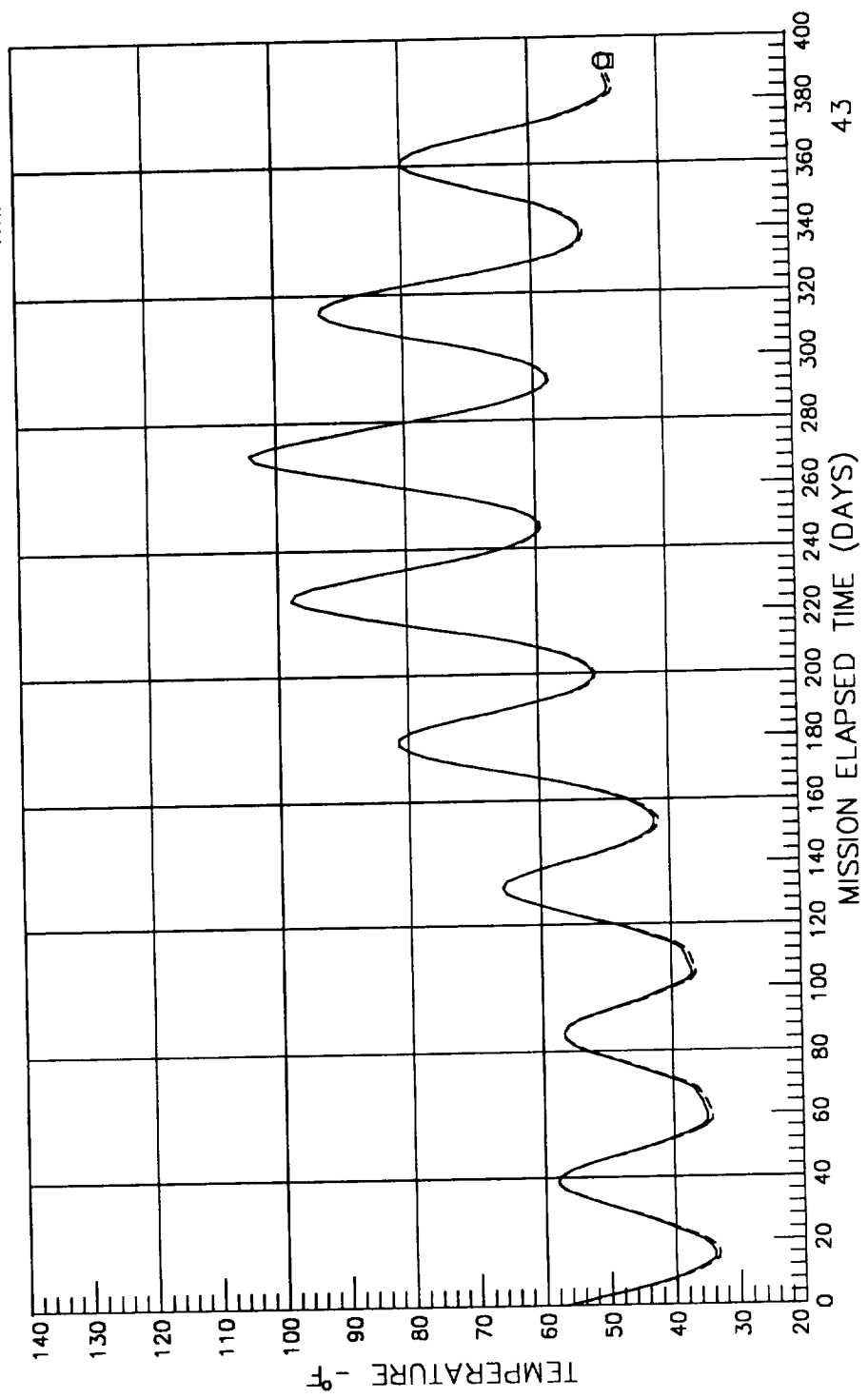
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: A8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 8 TRAY  
 □ - - - 98 SURFACE



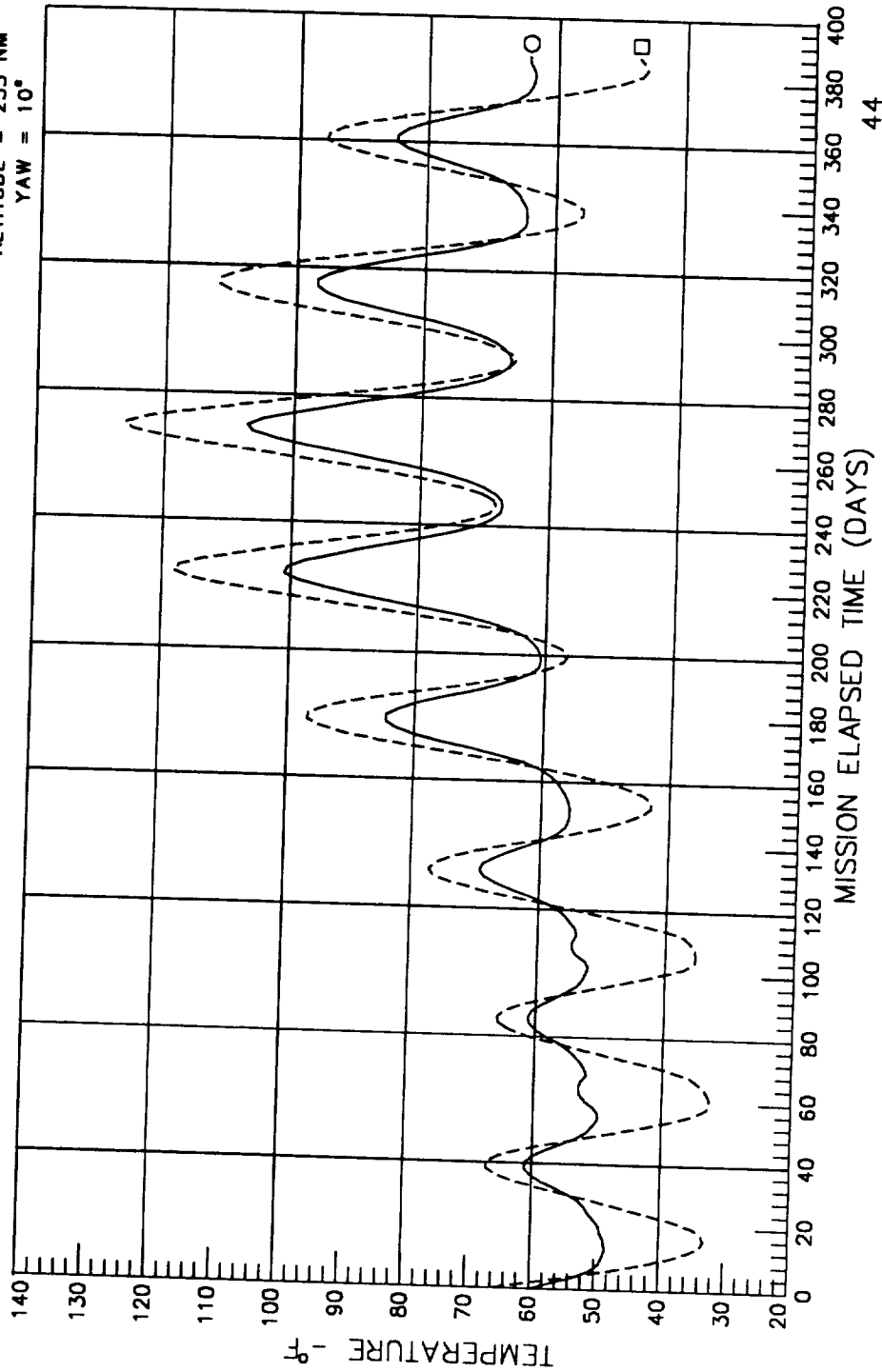
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: B8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 20 TRAY  
 □ - - - 110 SURFACE



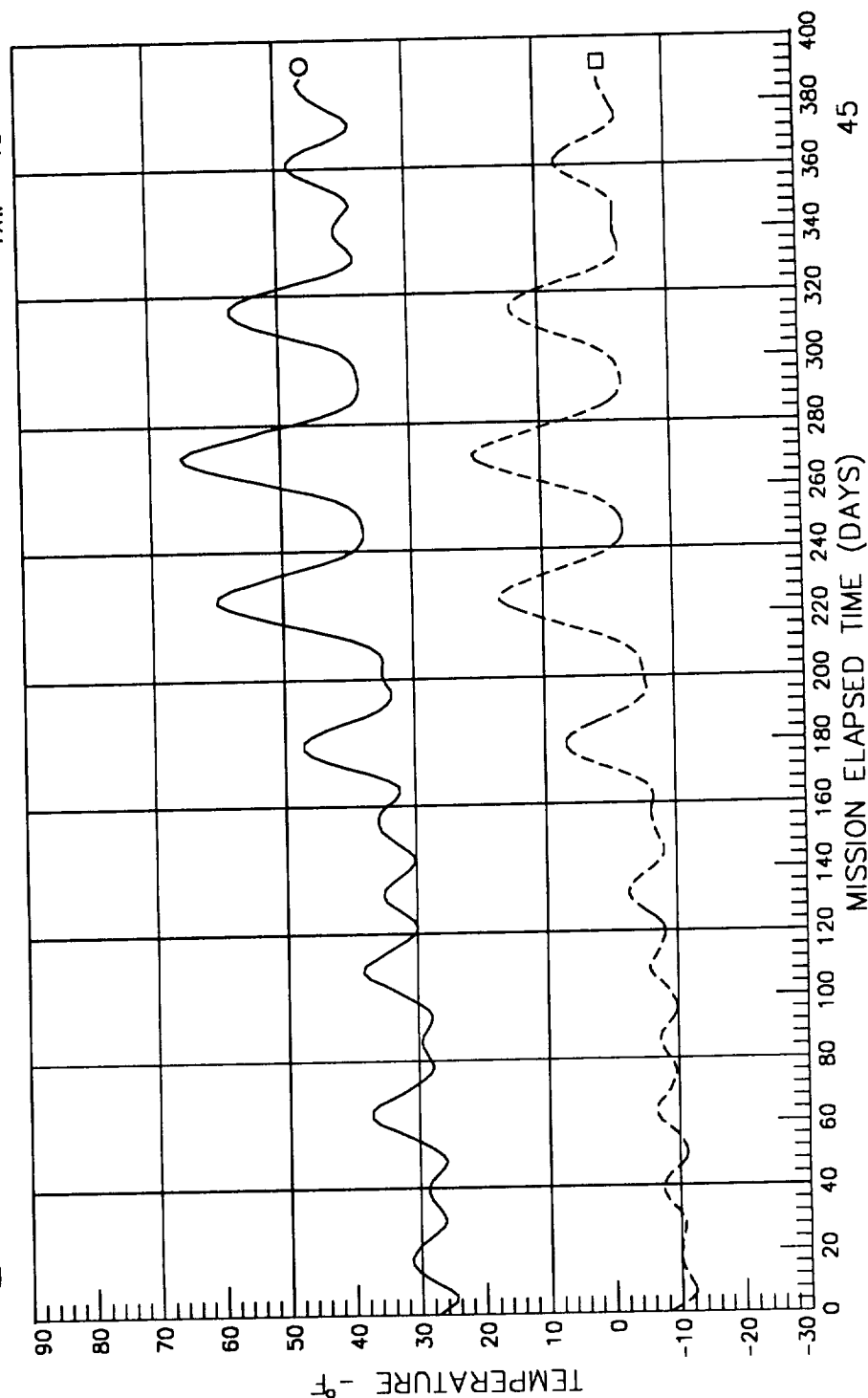
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: C8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 32 TRAY  
 □ 122 SURFACE



# LONG DURATION EXPOSURE FACILITY

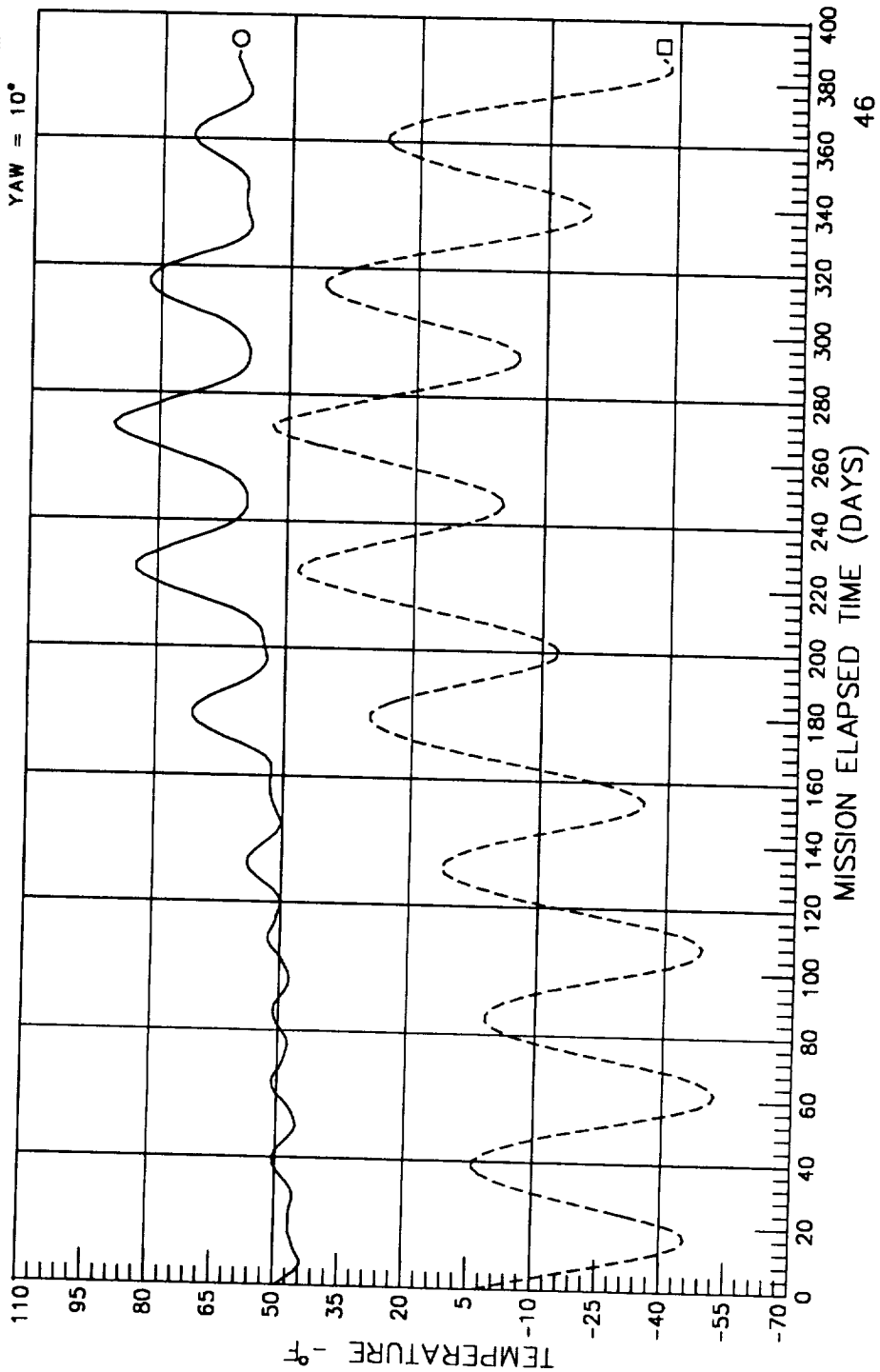
## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: D8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

44 TRAY  
 134 SURFACE

○ ———  
 □ - - - -



# LONG DURATION EXPOSURE FACILITY

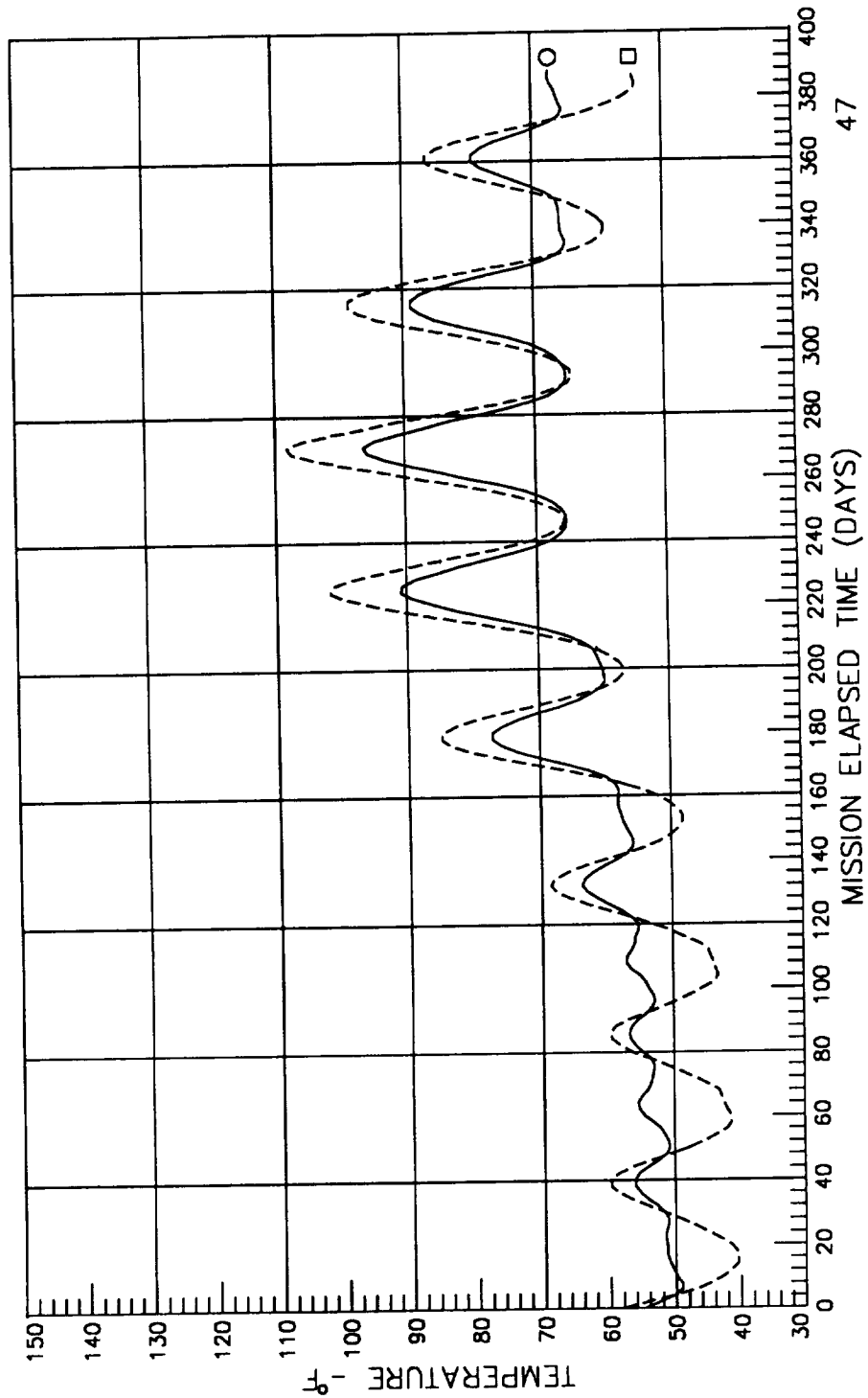
## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: E8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

56 TRAY  
 146 SURFACE

○  
 □



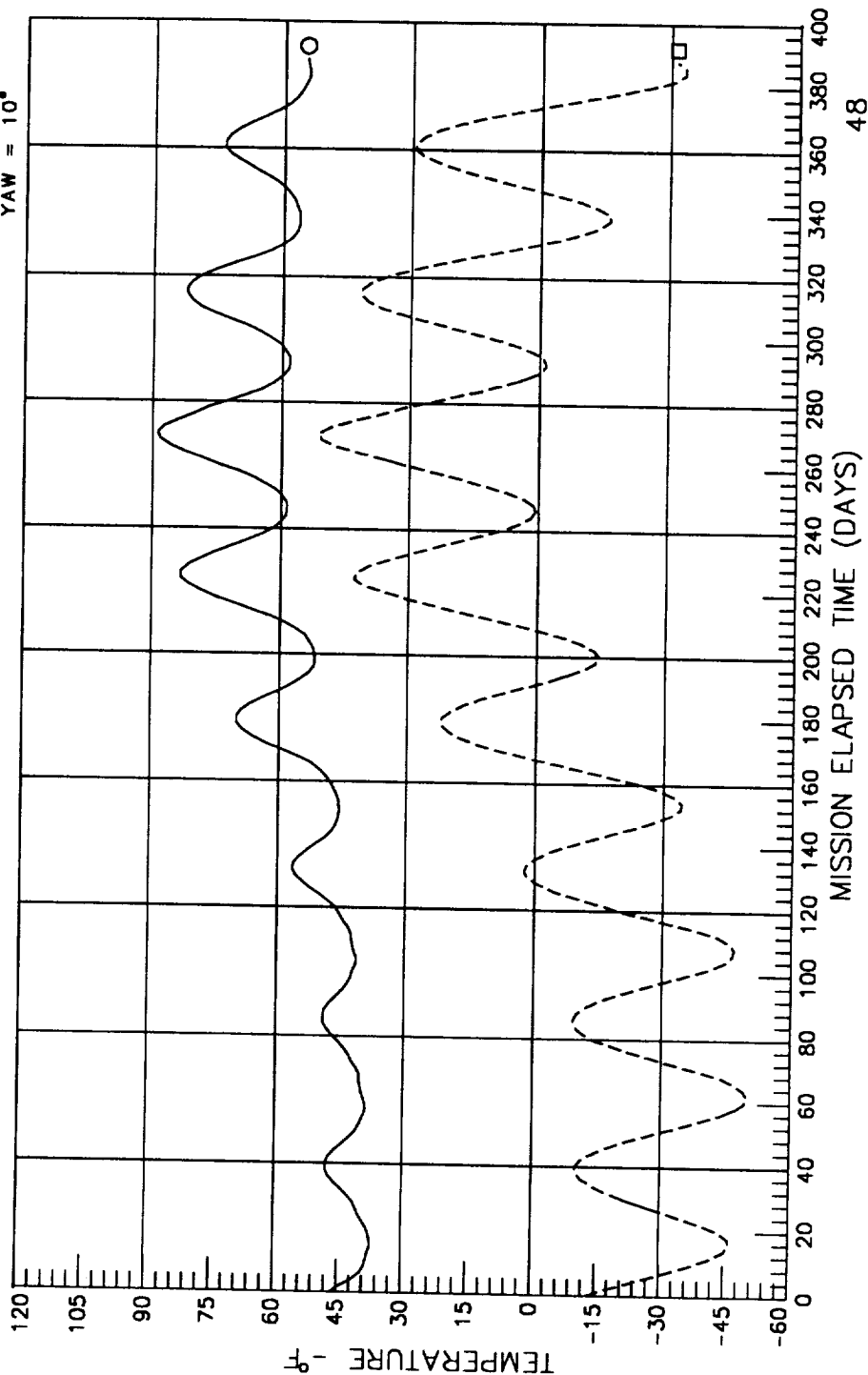
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: F8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 68 TRAY  
 □ - - - 158 SURFACE





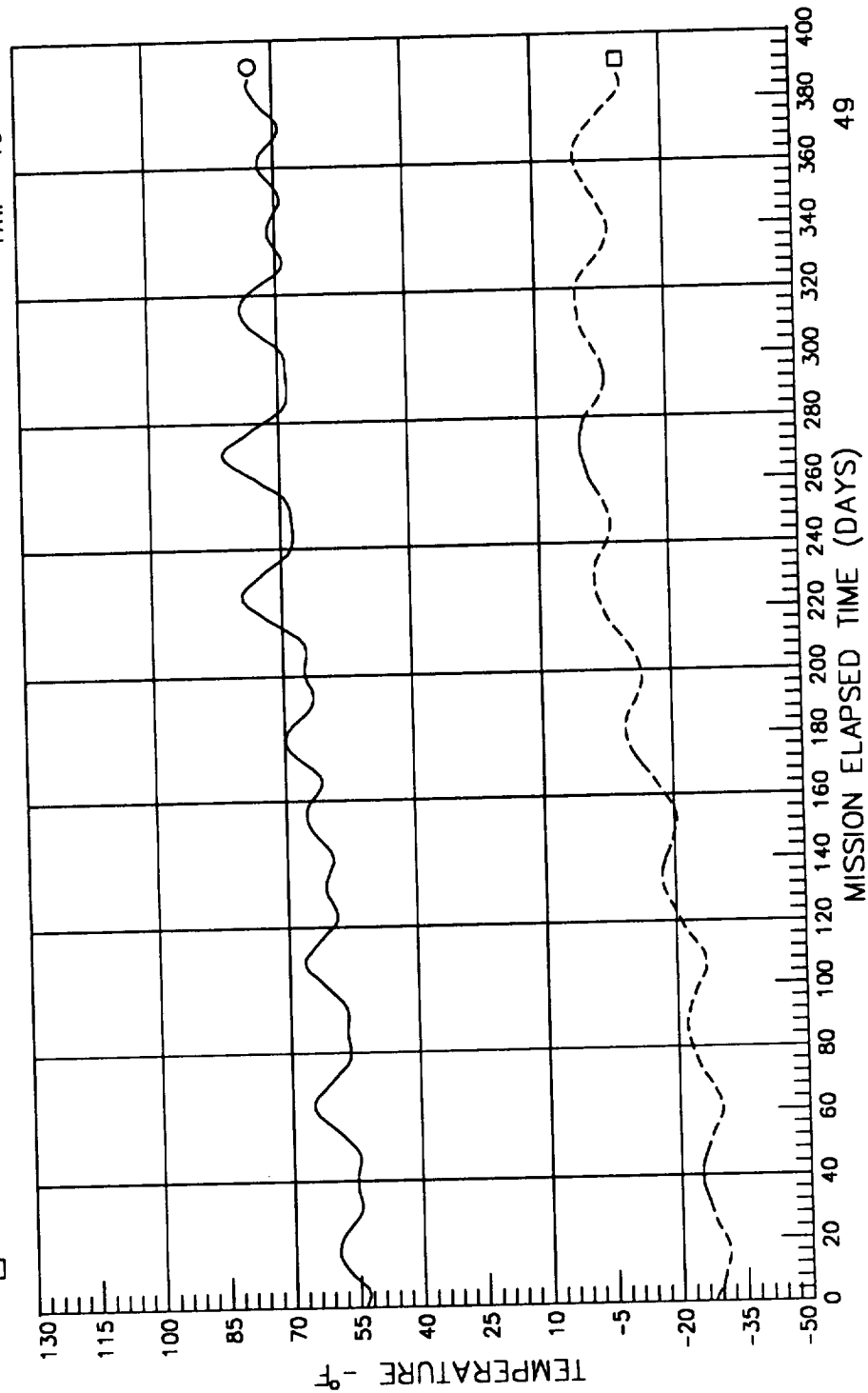
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: A9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 9 TRAY  
 □ 99 SURFACE



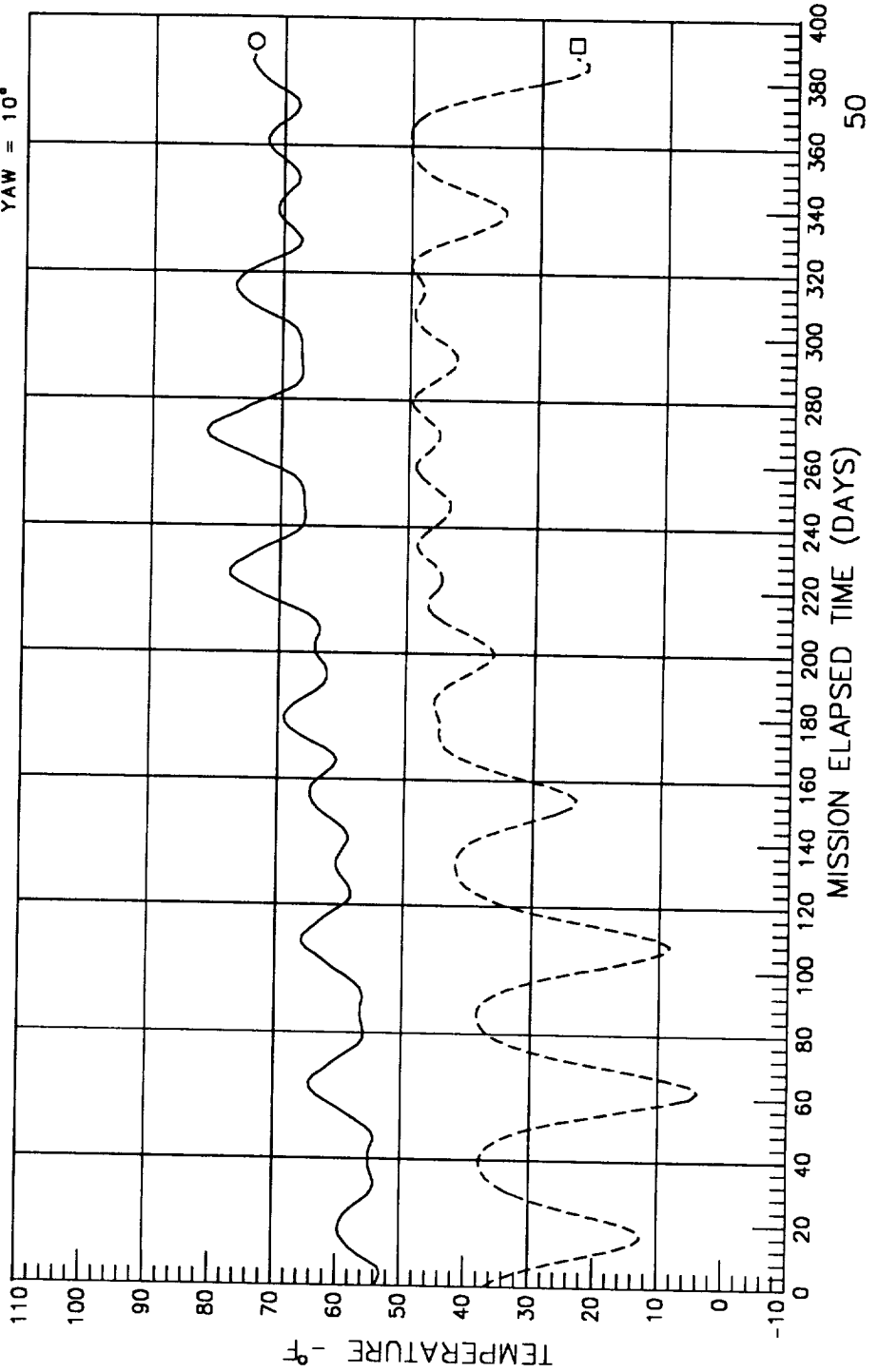
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: B9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 21 TRAY  
 □ - - - 111 SURFACE



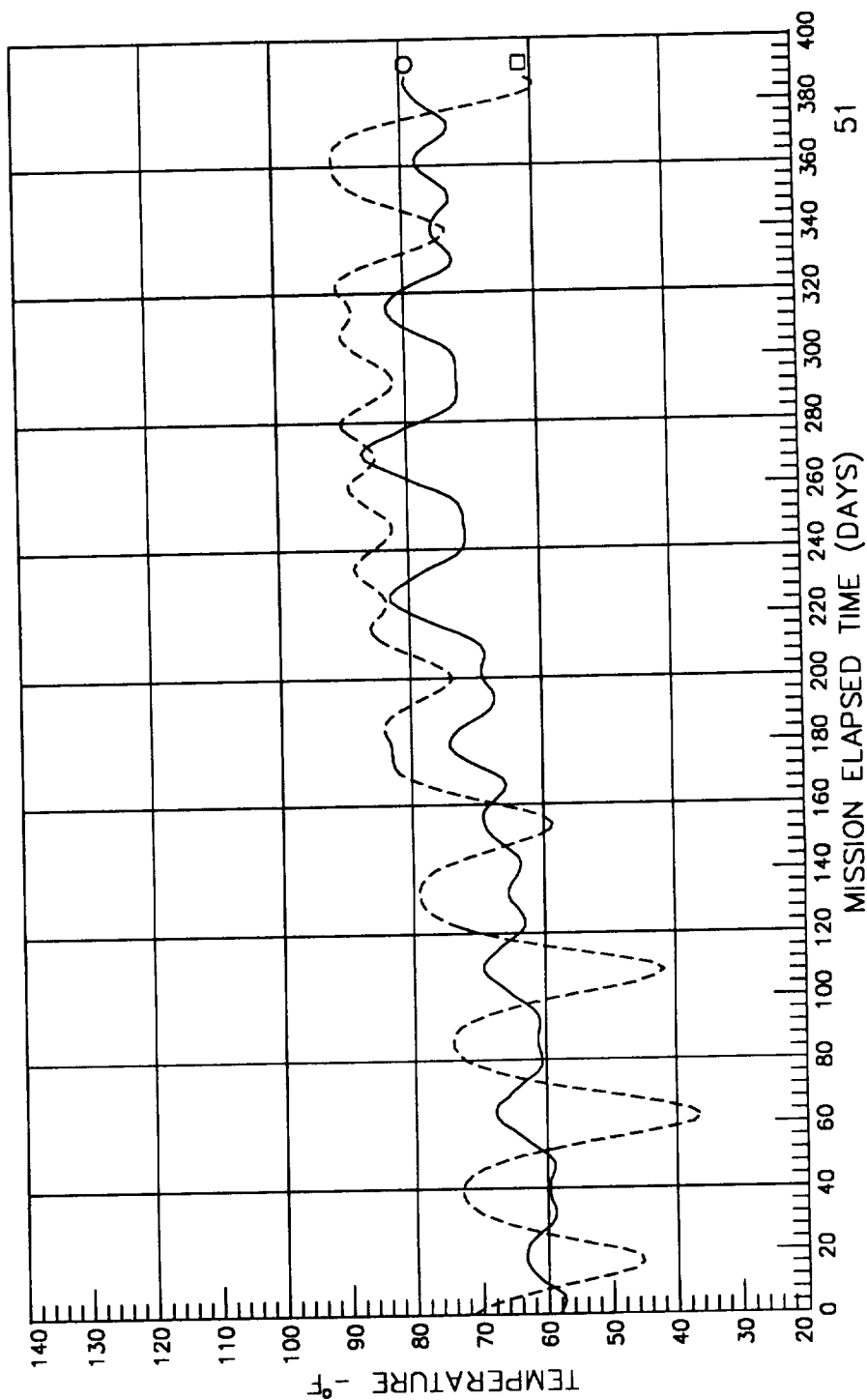
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: C9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 33 TRAY  
 □ - - - - 123 SURFACE



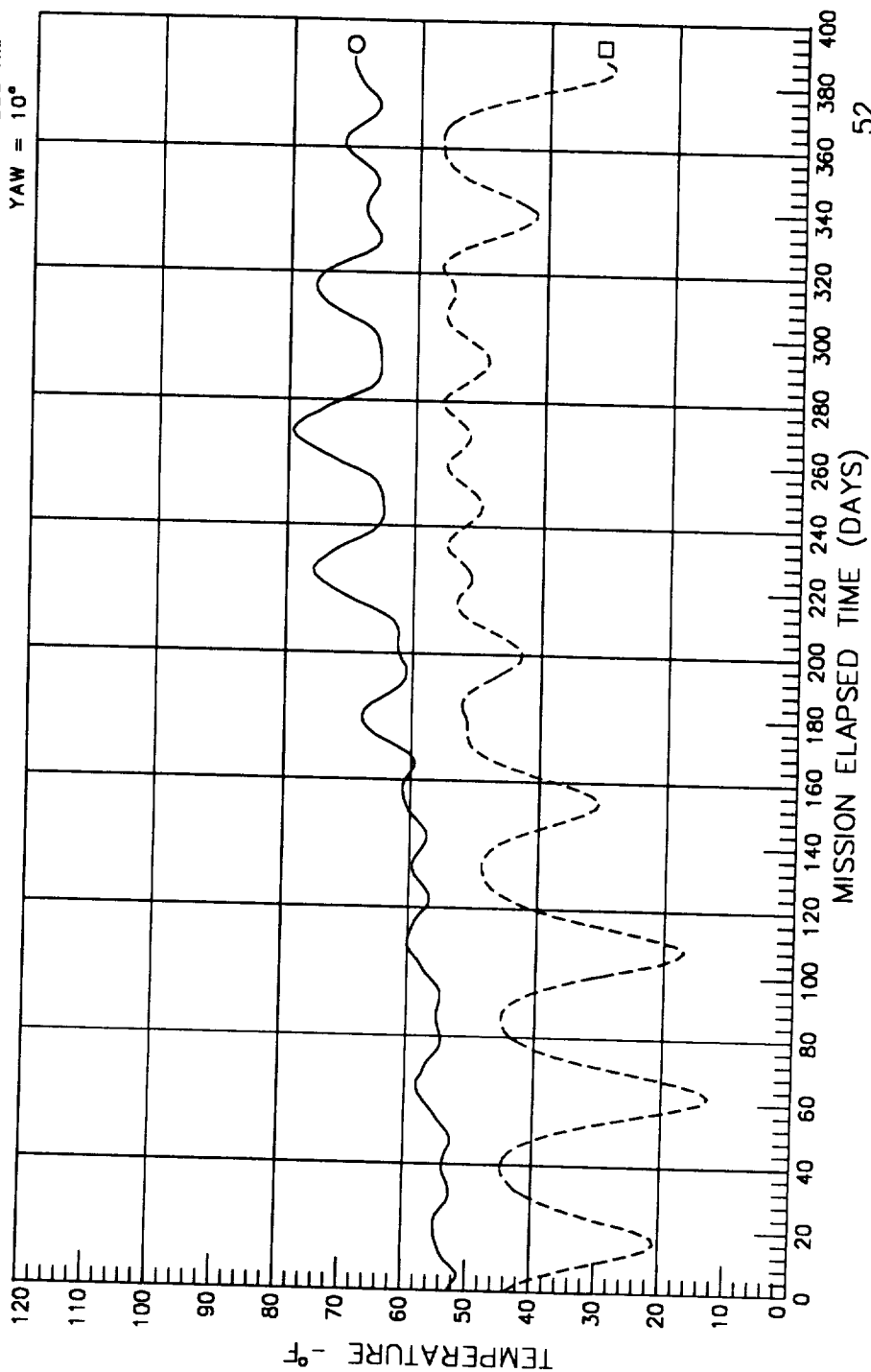
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: D9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 45 TRAY  
 □ - - - - 135 SURFACE

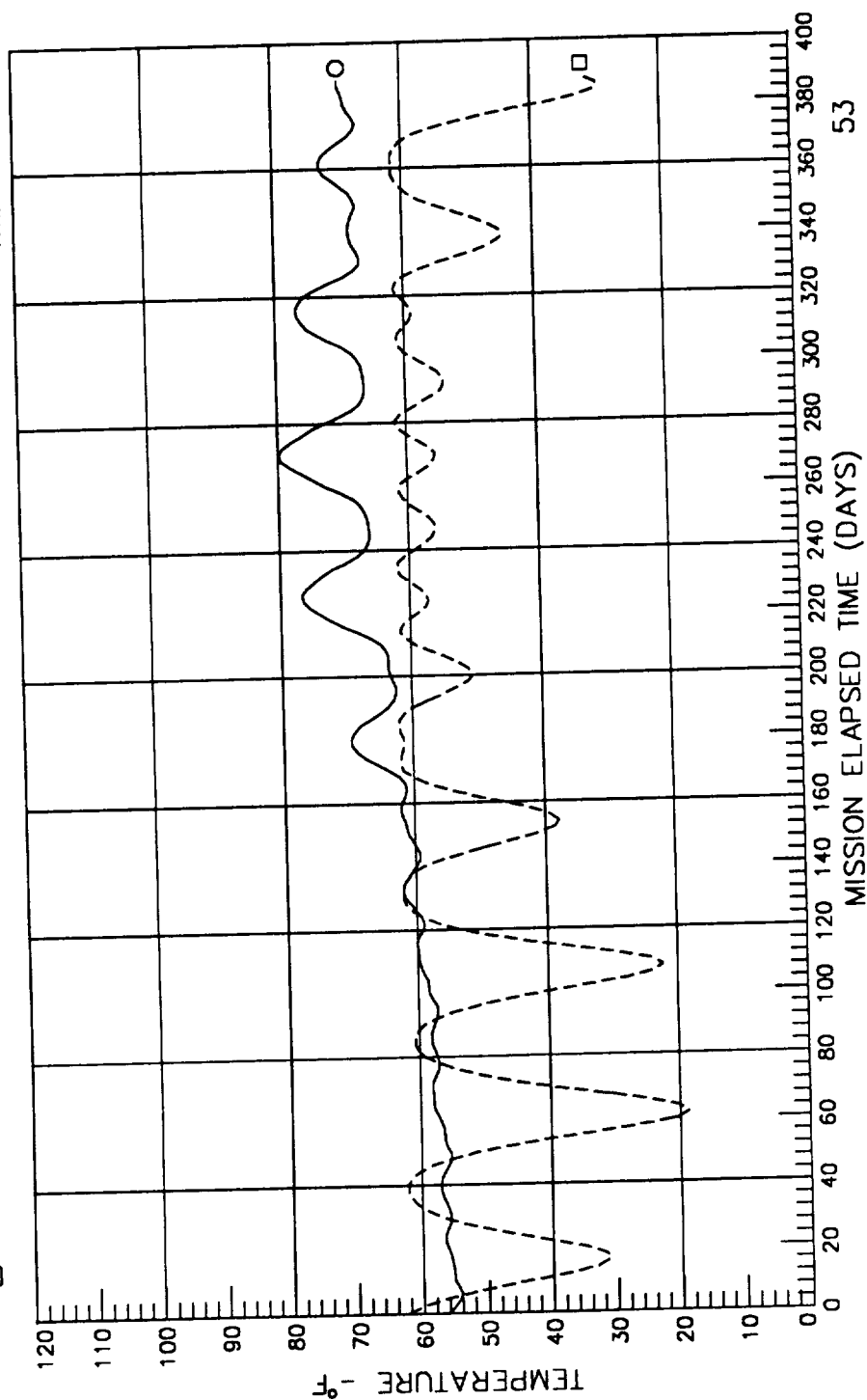


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: E9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 57 TRAY  
□ 147 SURFACE

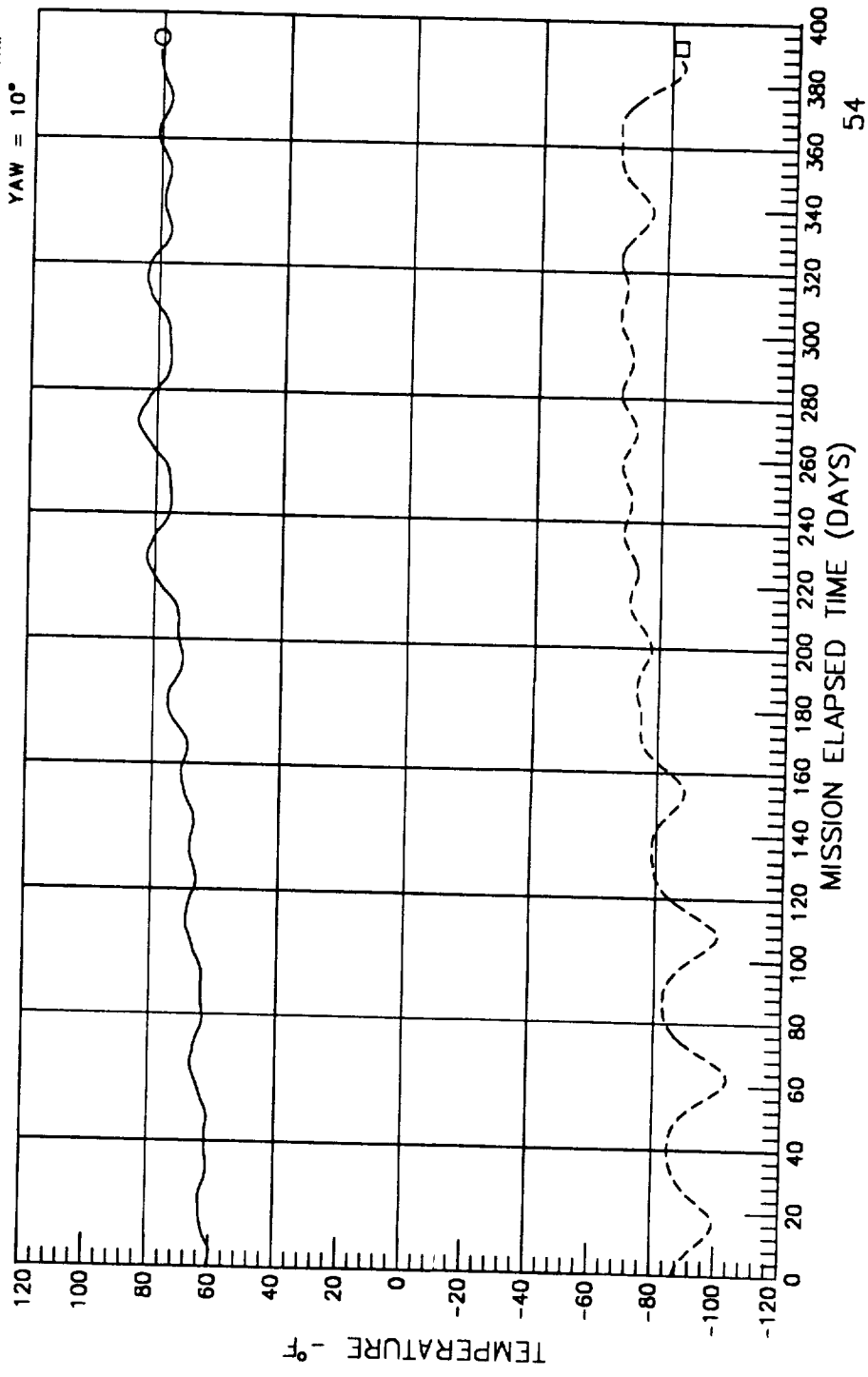


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: F9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ — 69 TRAY  
□ - - - 159 SURFACE

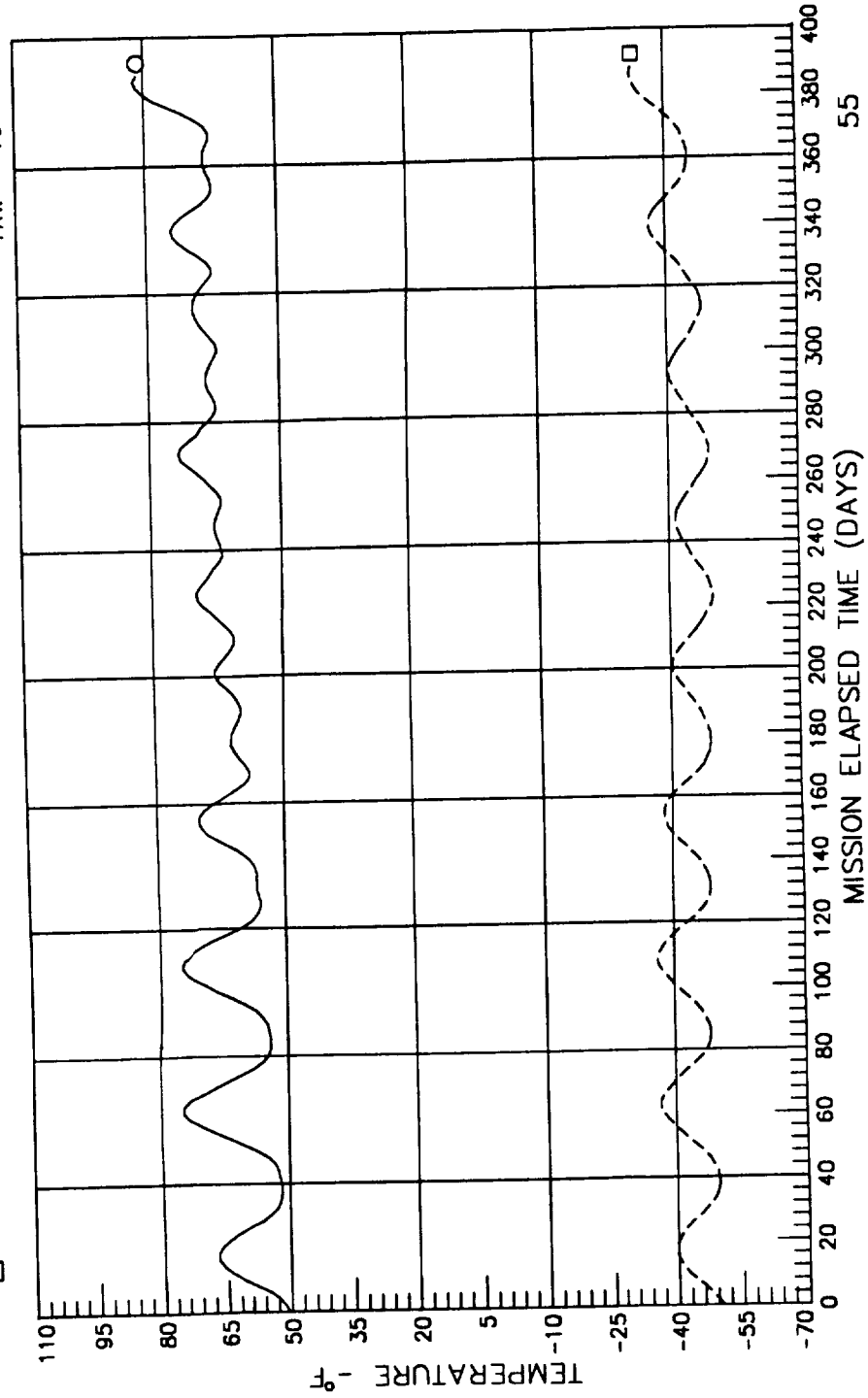


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: A10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 10 TRAY  
□ 100 SURFACE



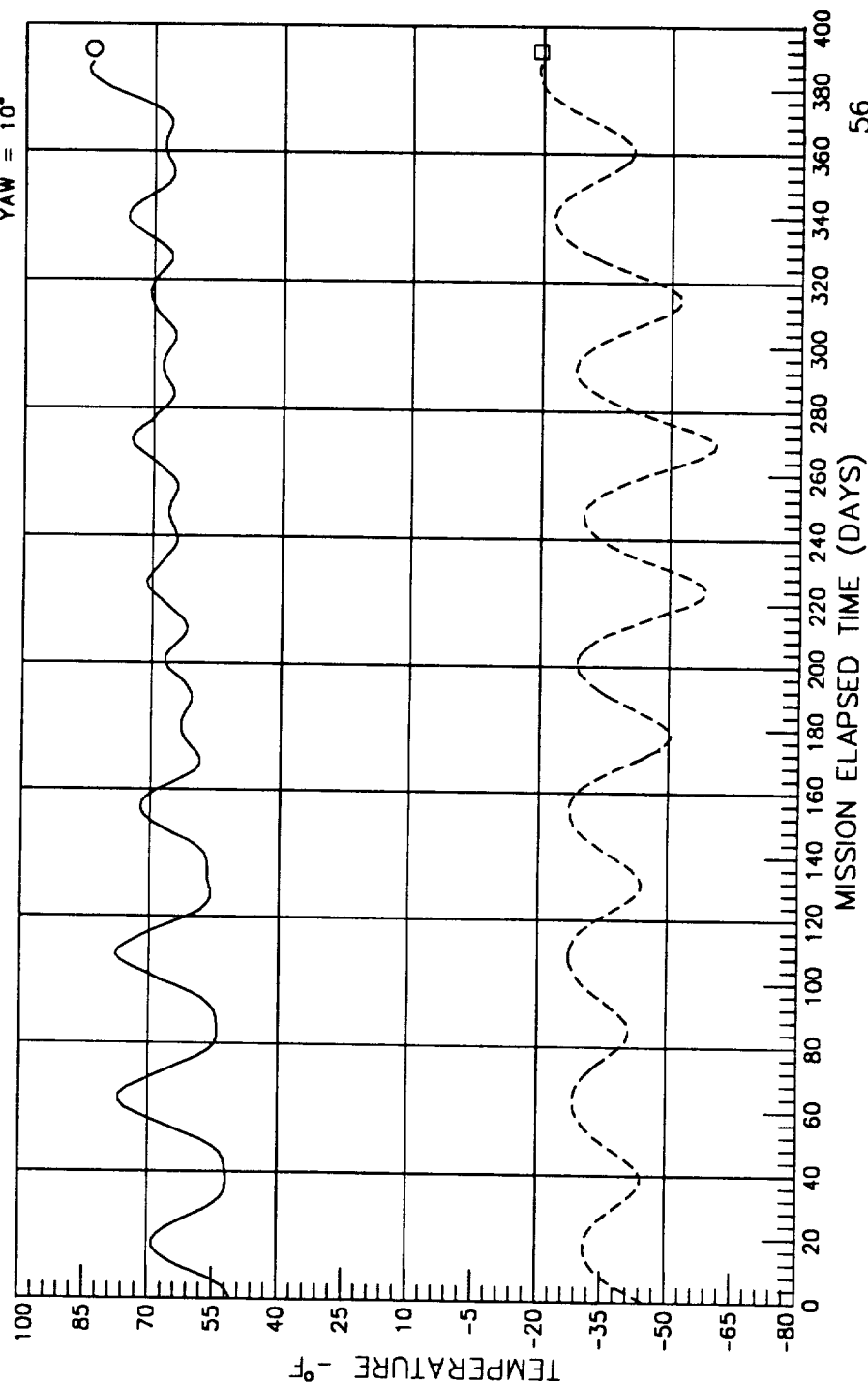
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: B10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = .31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 22 TRAY  
 □ - - - - 112 SURFACE





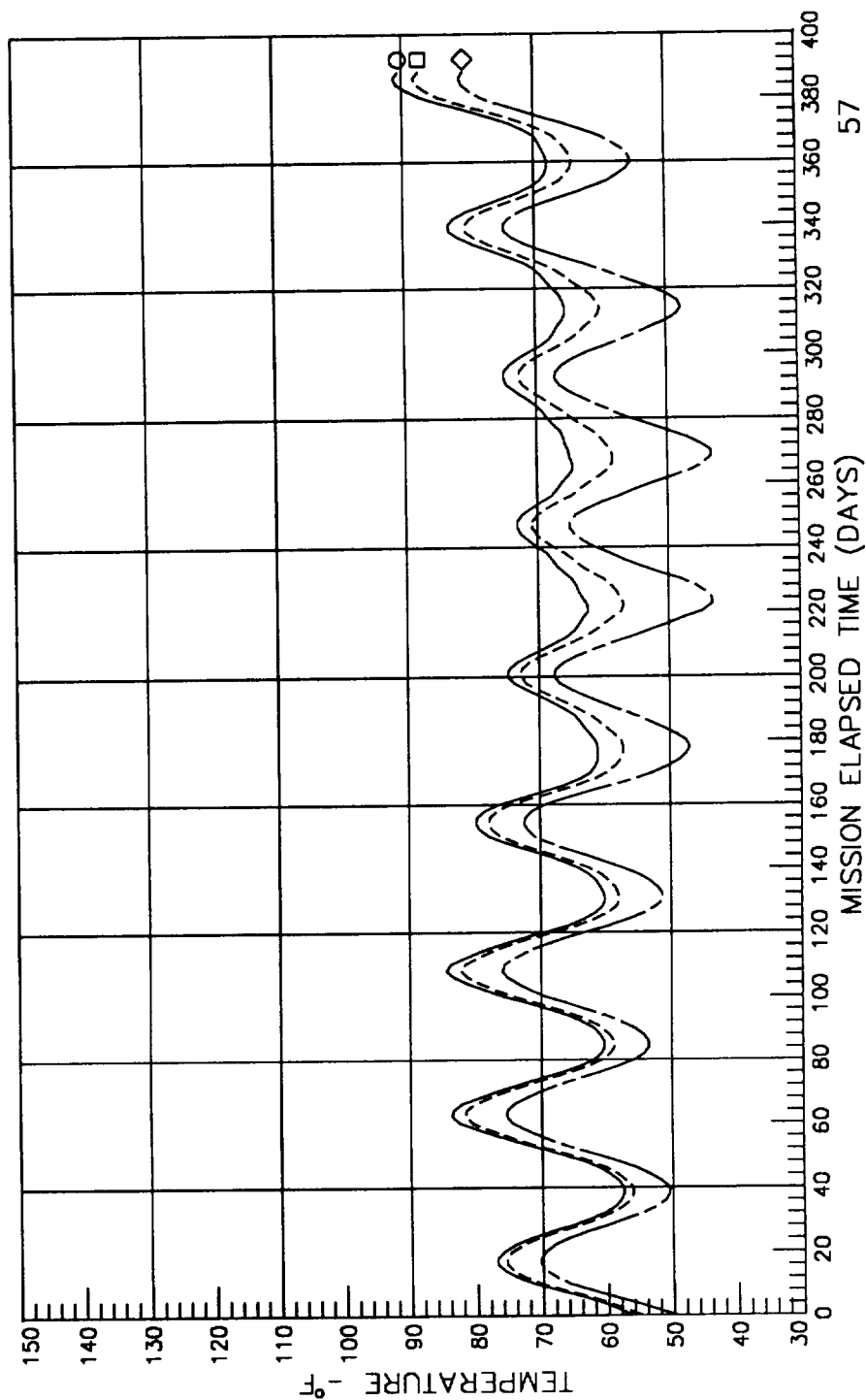
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: C10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 34 TRAY  
 □ 124 SURFACE  
 ◇ 275 SURFACE



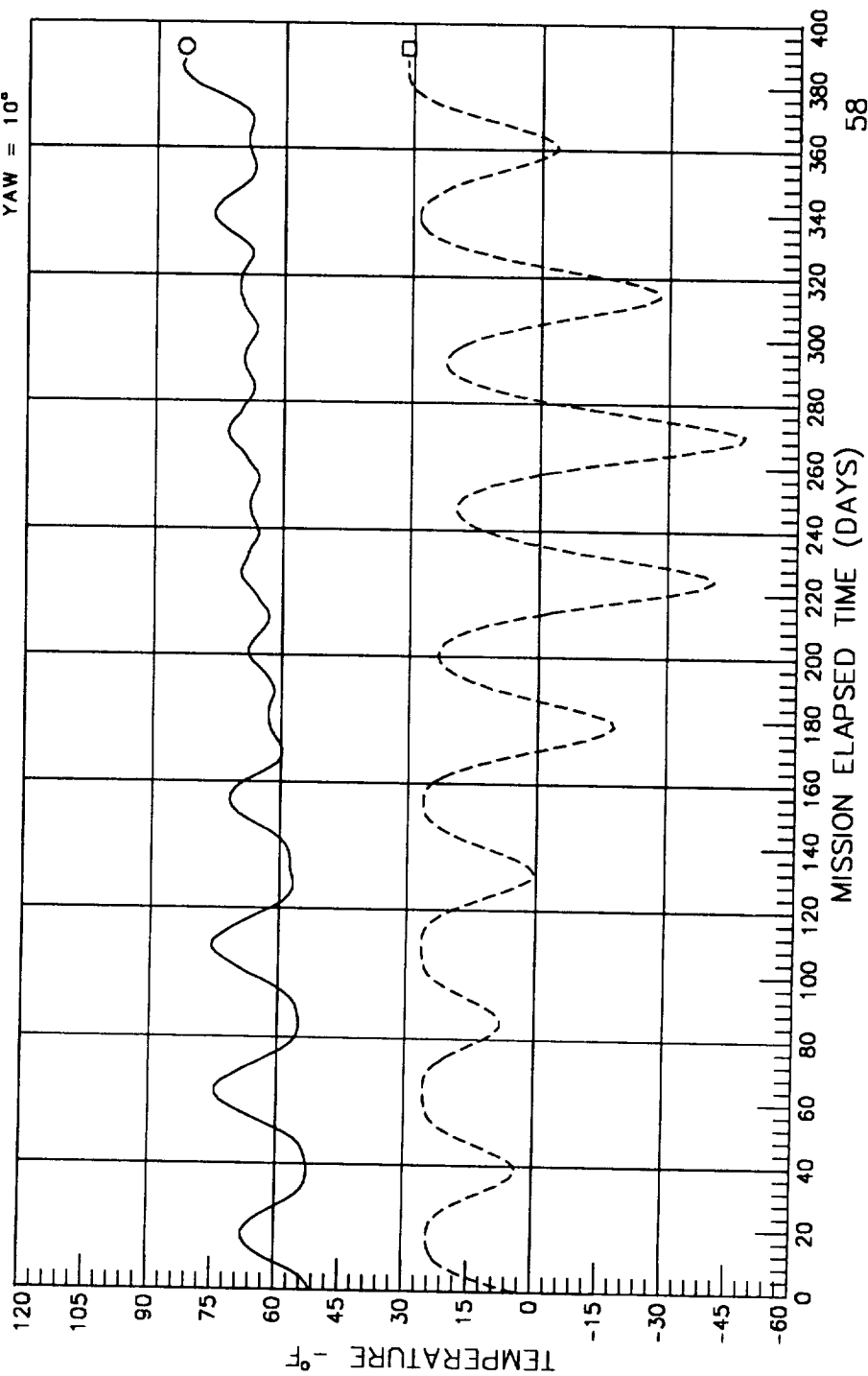
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: D10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 46 TRAY  
 □ - - - 136 SURFACE

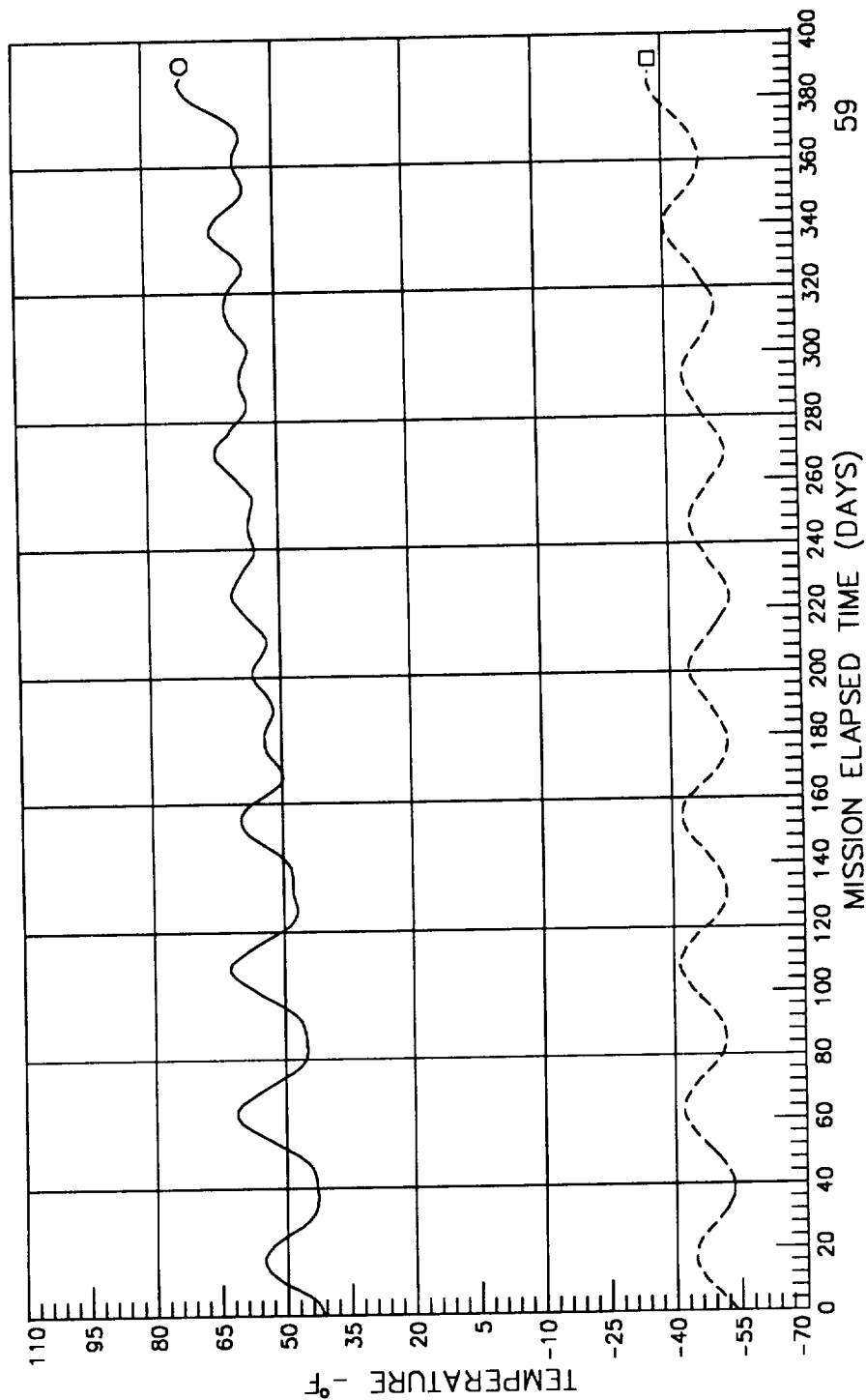


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: E10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 58 TRAY  
□ 148 SURFACE



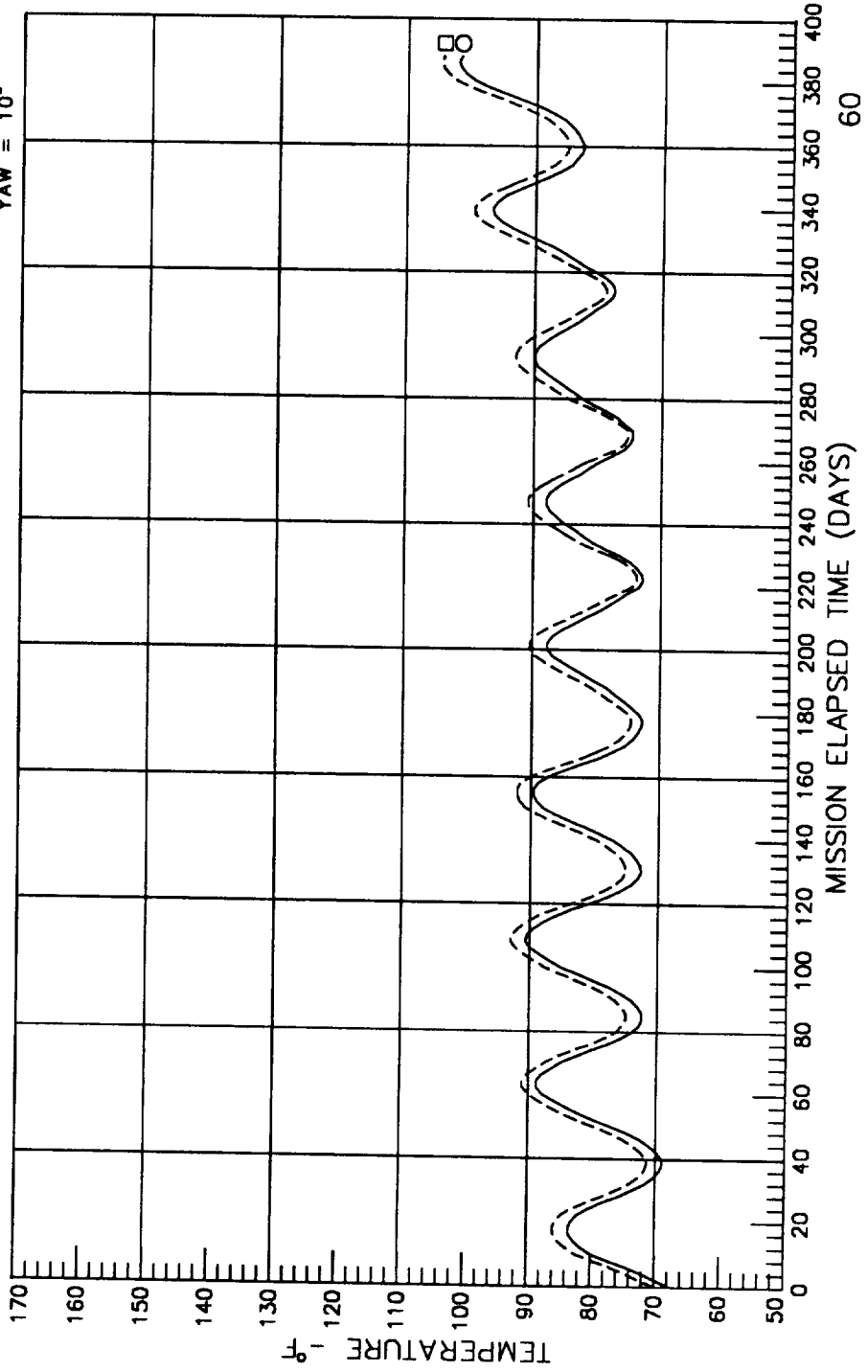
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: F10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 70 TRAY  
 □ - - - - 160 SURFACE

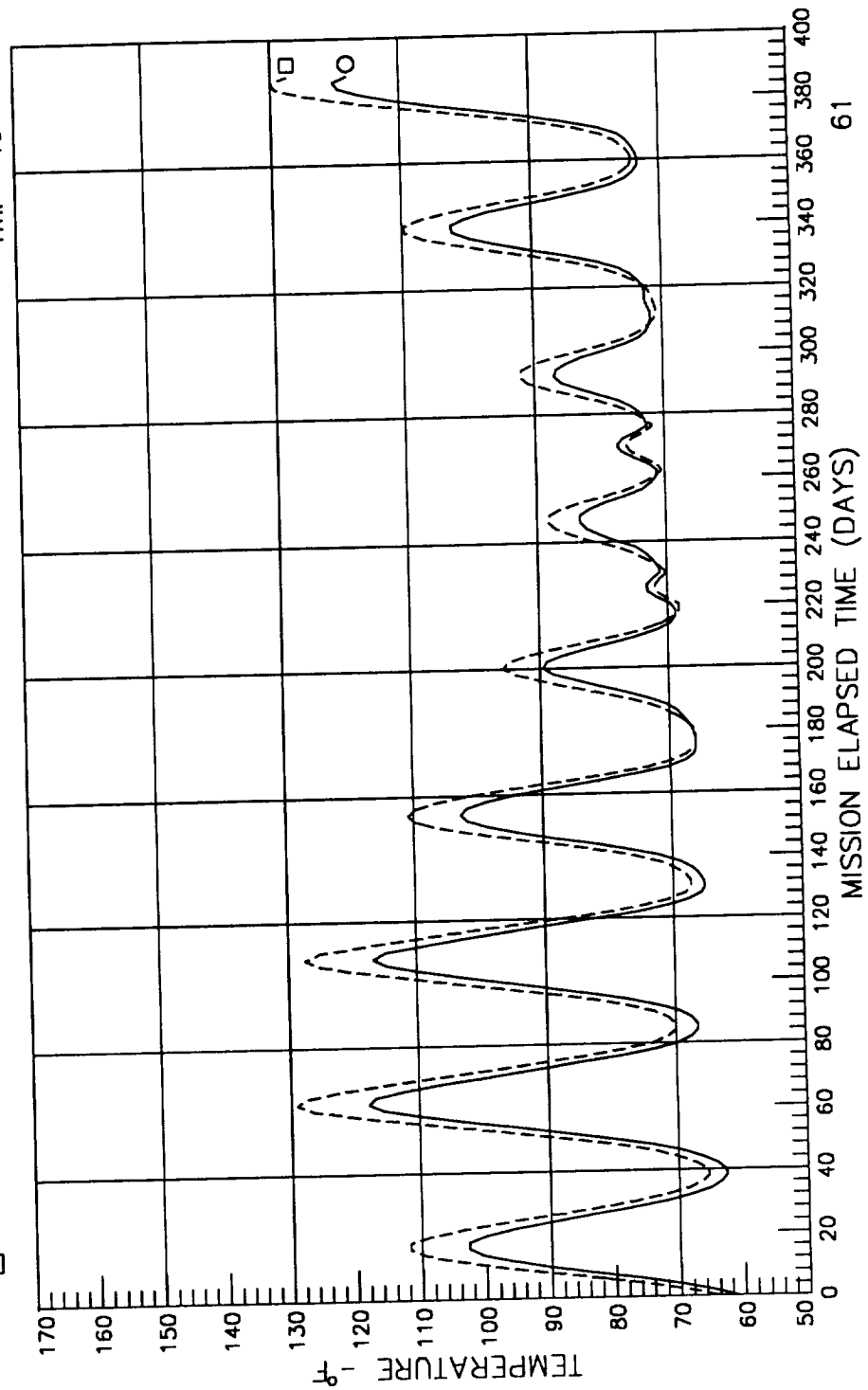


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: A11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 11 TRAY  
□ 101 SURFACE



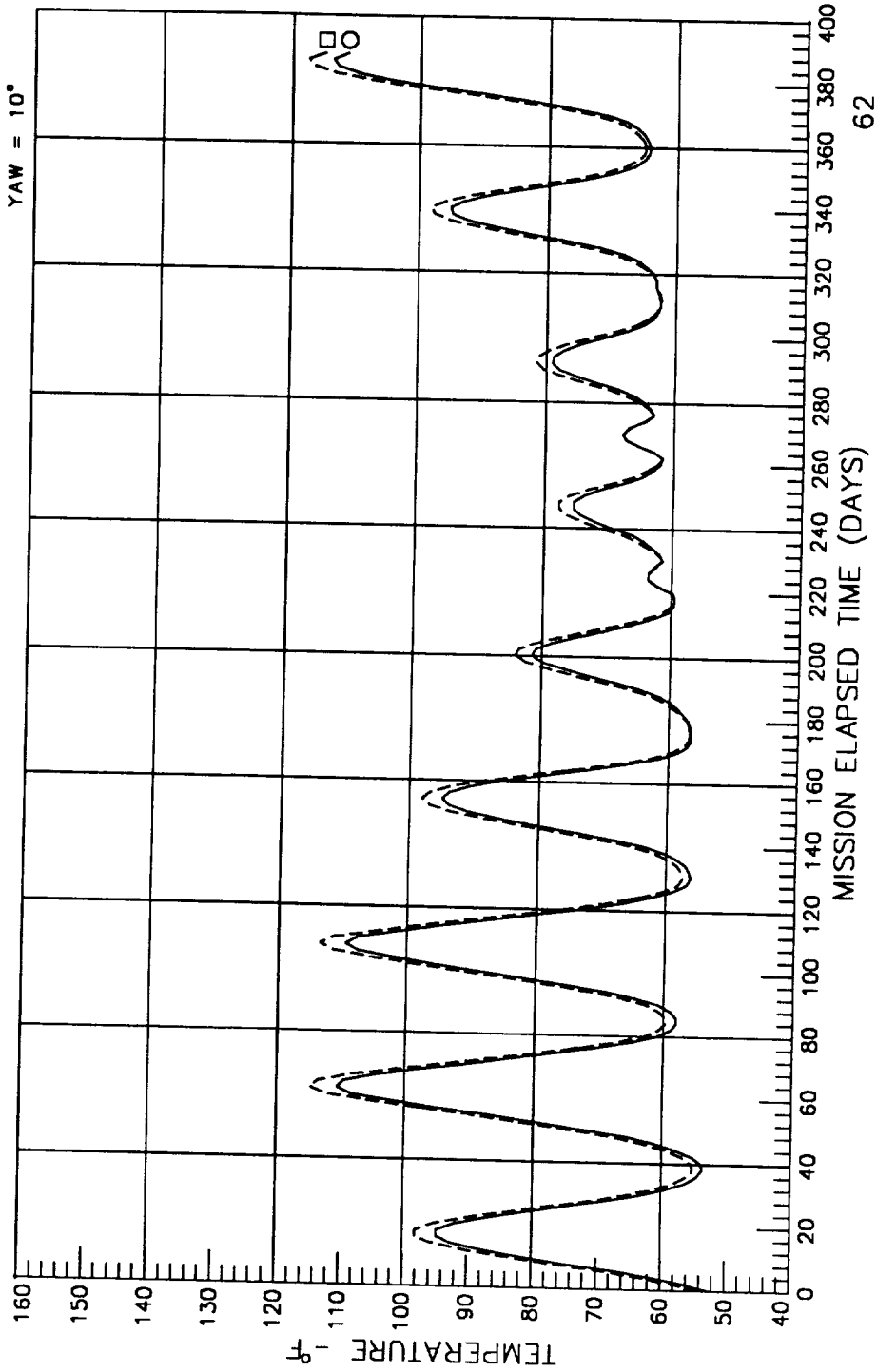
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: B11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 23 TRAY  
 □ - - - 113 SURFACE

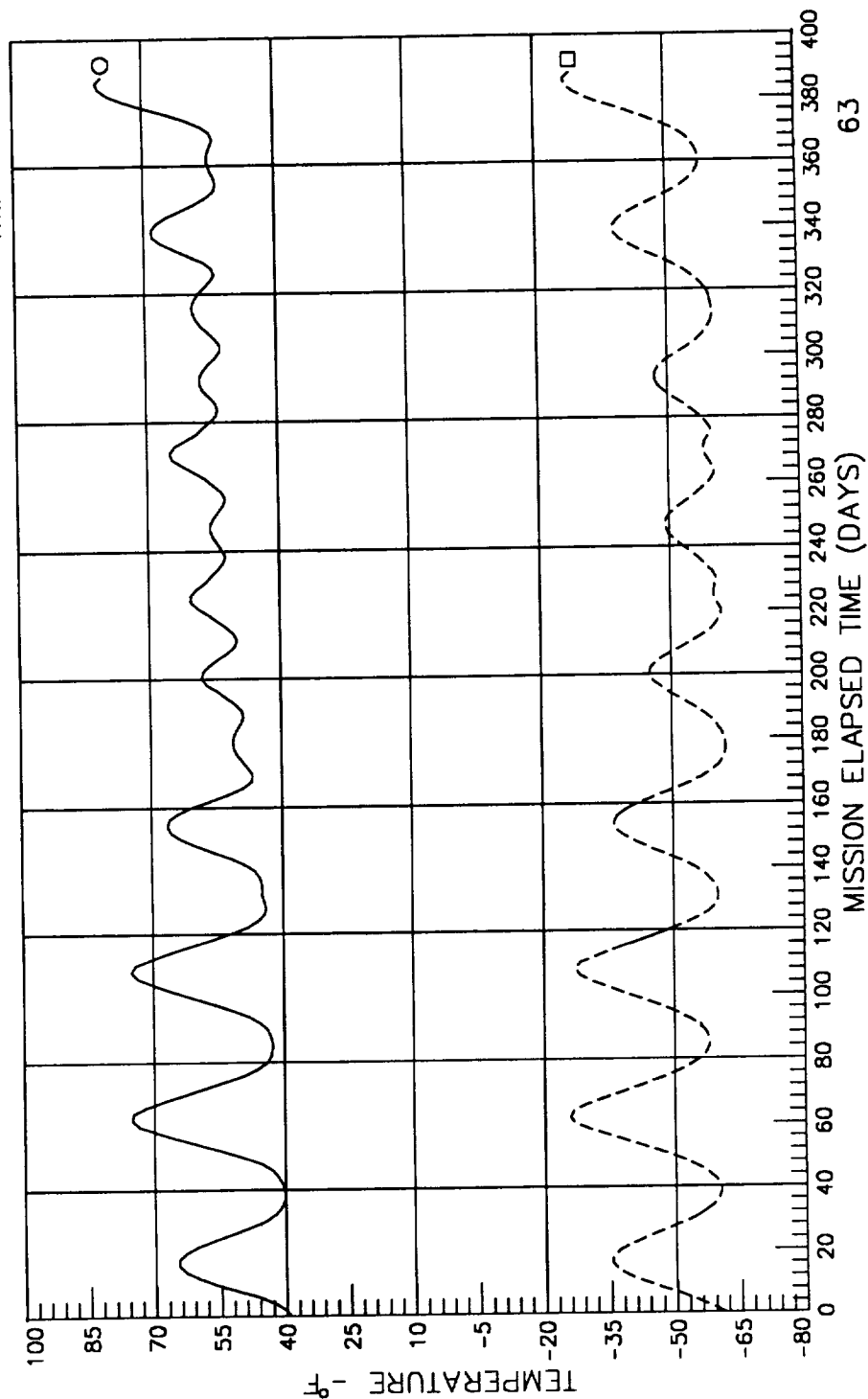


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: C11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ ——— 35 TRAY  
□ - - - - 125 SURFACE



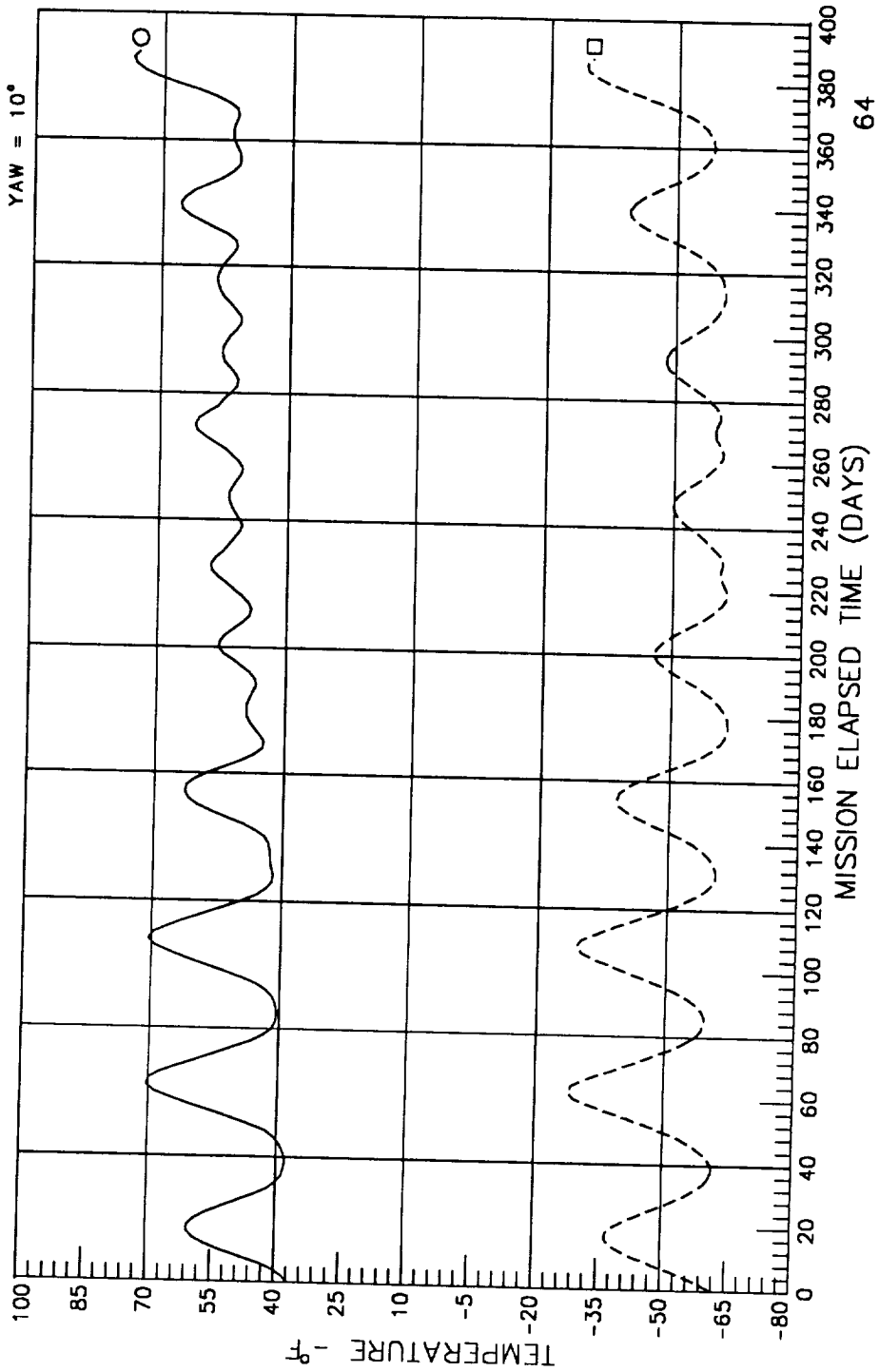
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: D11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 47 TRAY  
 □ - - - 137 SURFACE





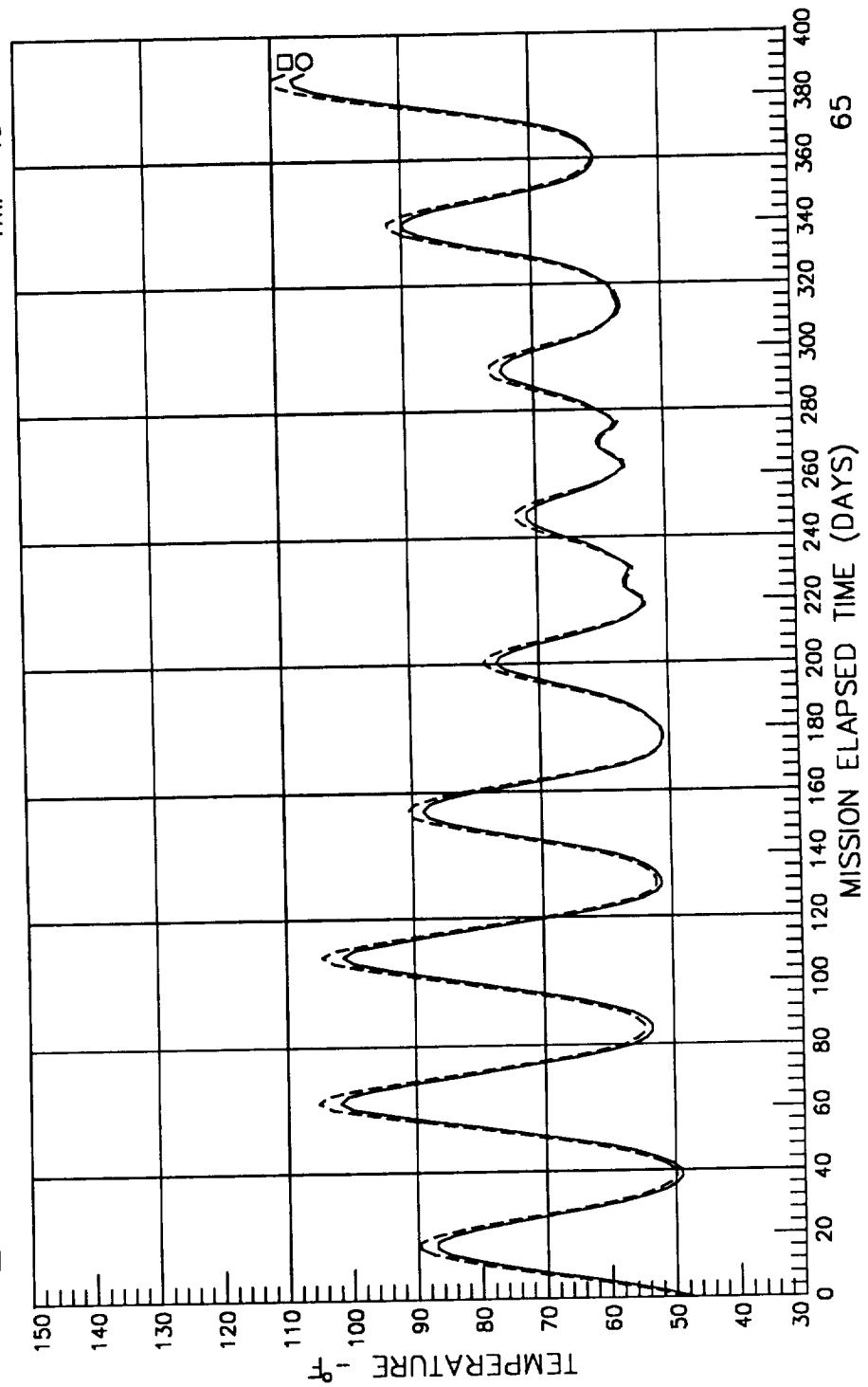
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: E11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 59 TRAY  
 □ 149 SURFACE

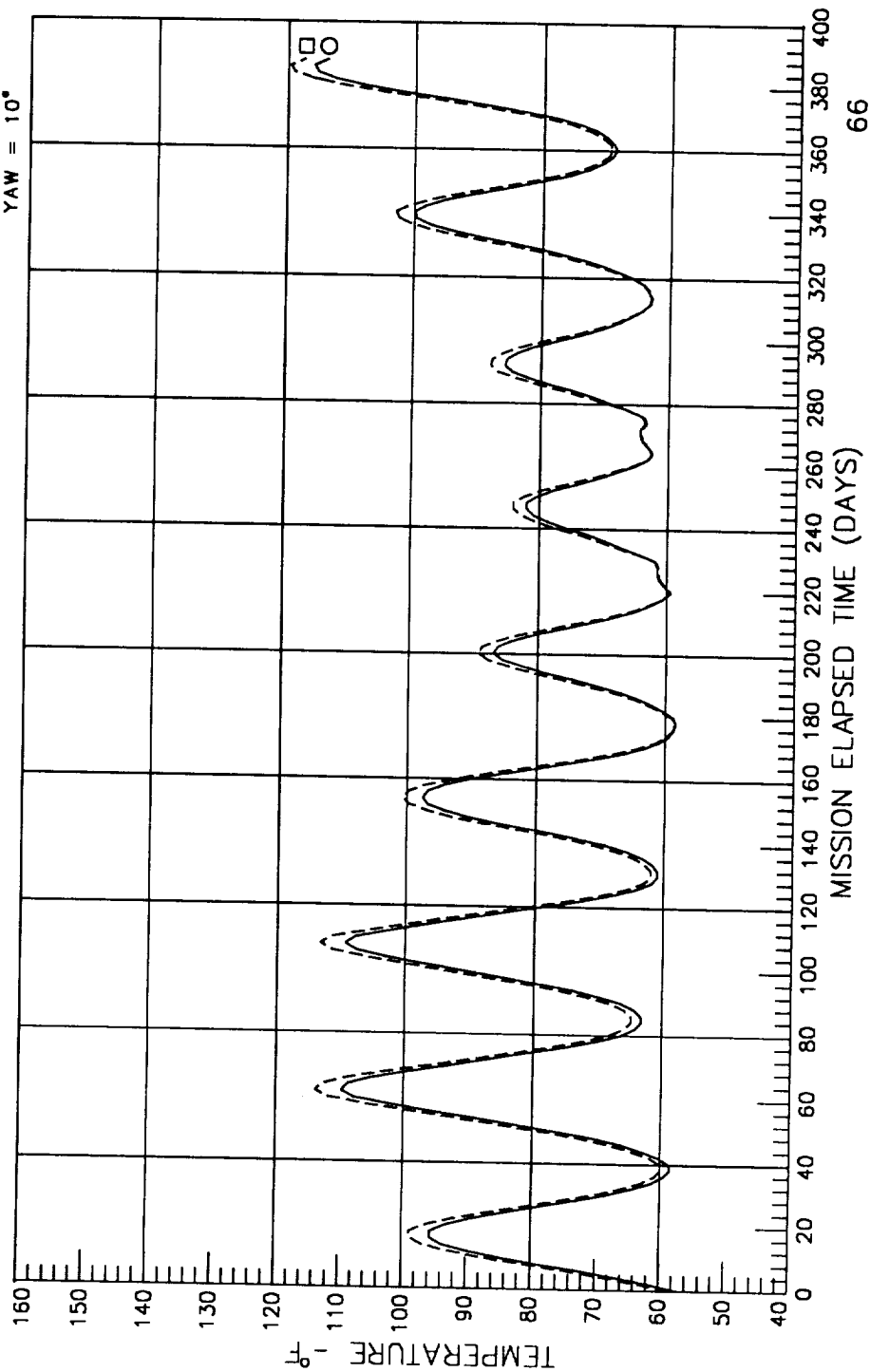


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: F11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 71 TRAY  
□ 161 SURFACE



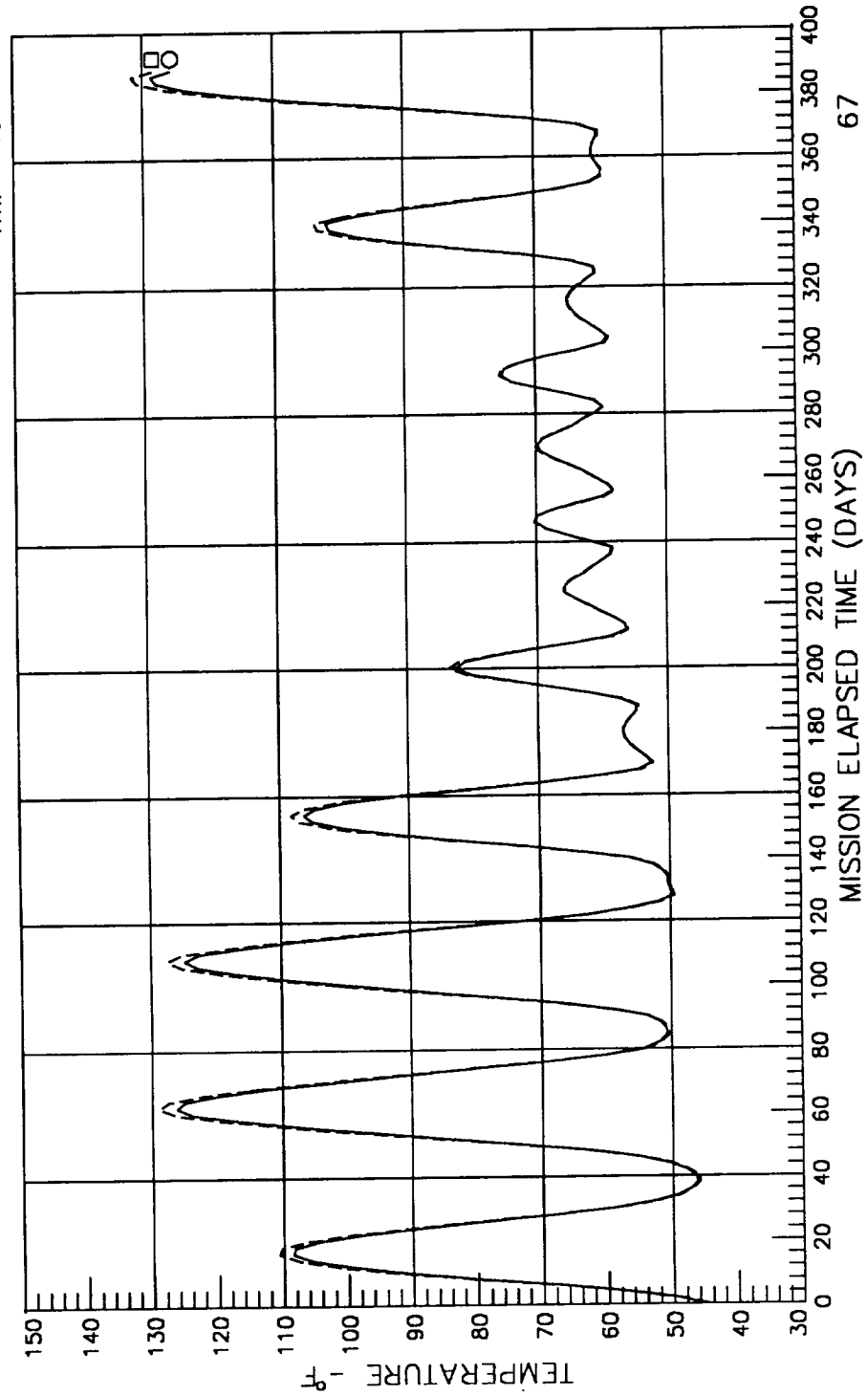
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: A12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 12 TRAY  
 □ - - - 102 SURFACE



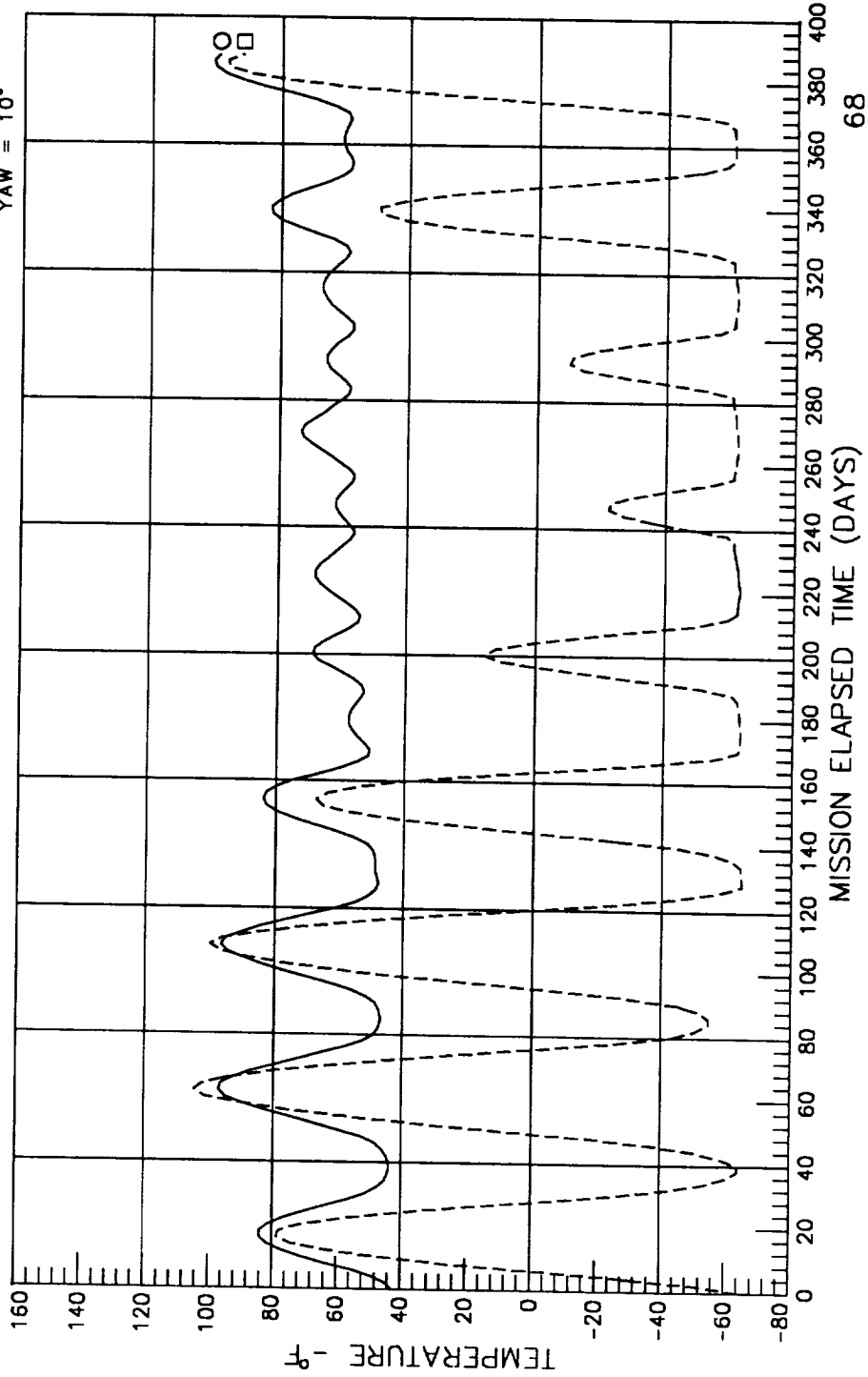
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: B12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 24 TRAY  
 □ - - - 114 SURFACE



# LONG DURATION EXPOSURE FACILITY

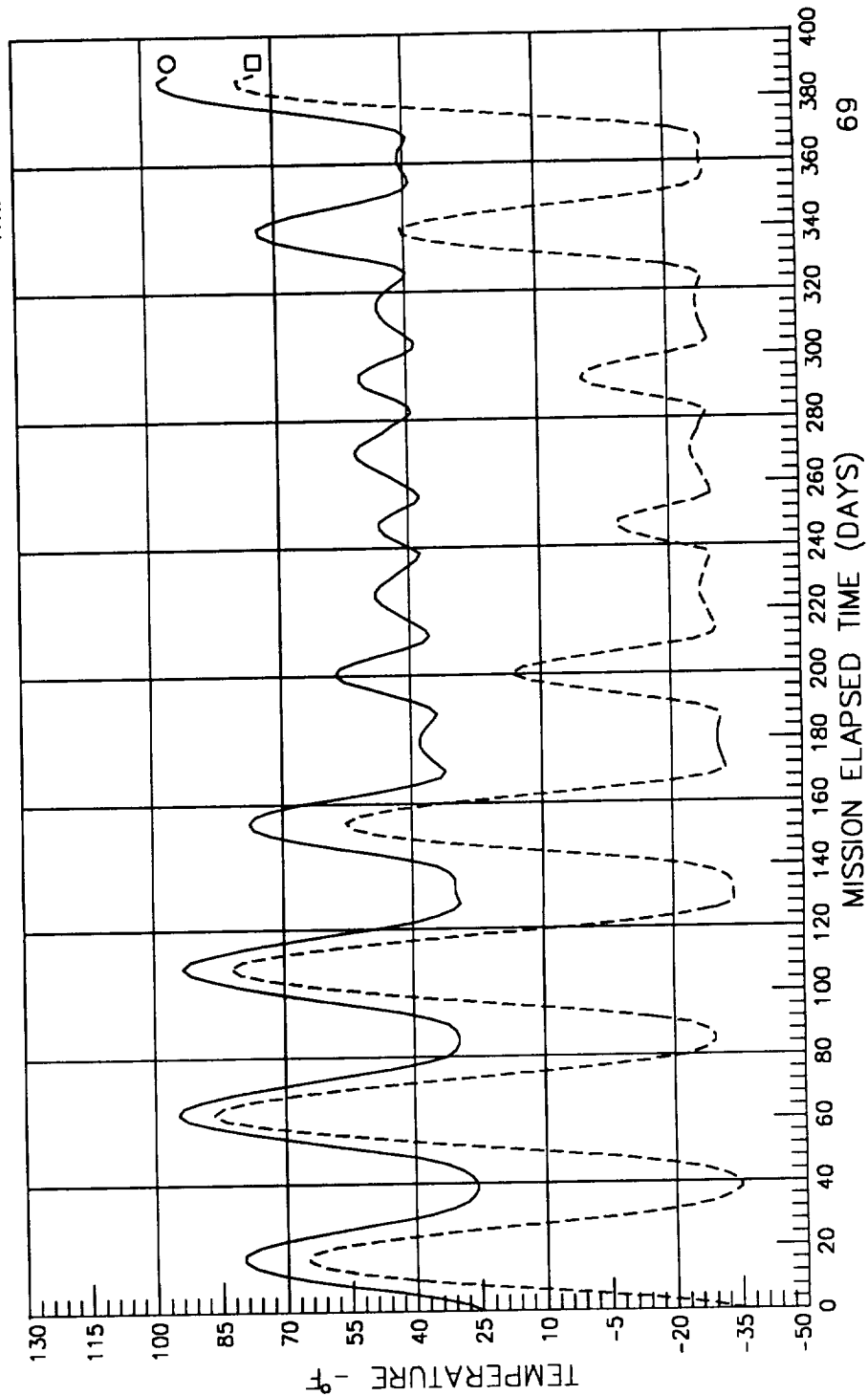
## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: C12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

36 TRAY  
 126 SURFACE

○ ———  
 □ - - - -



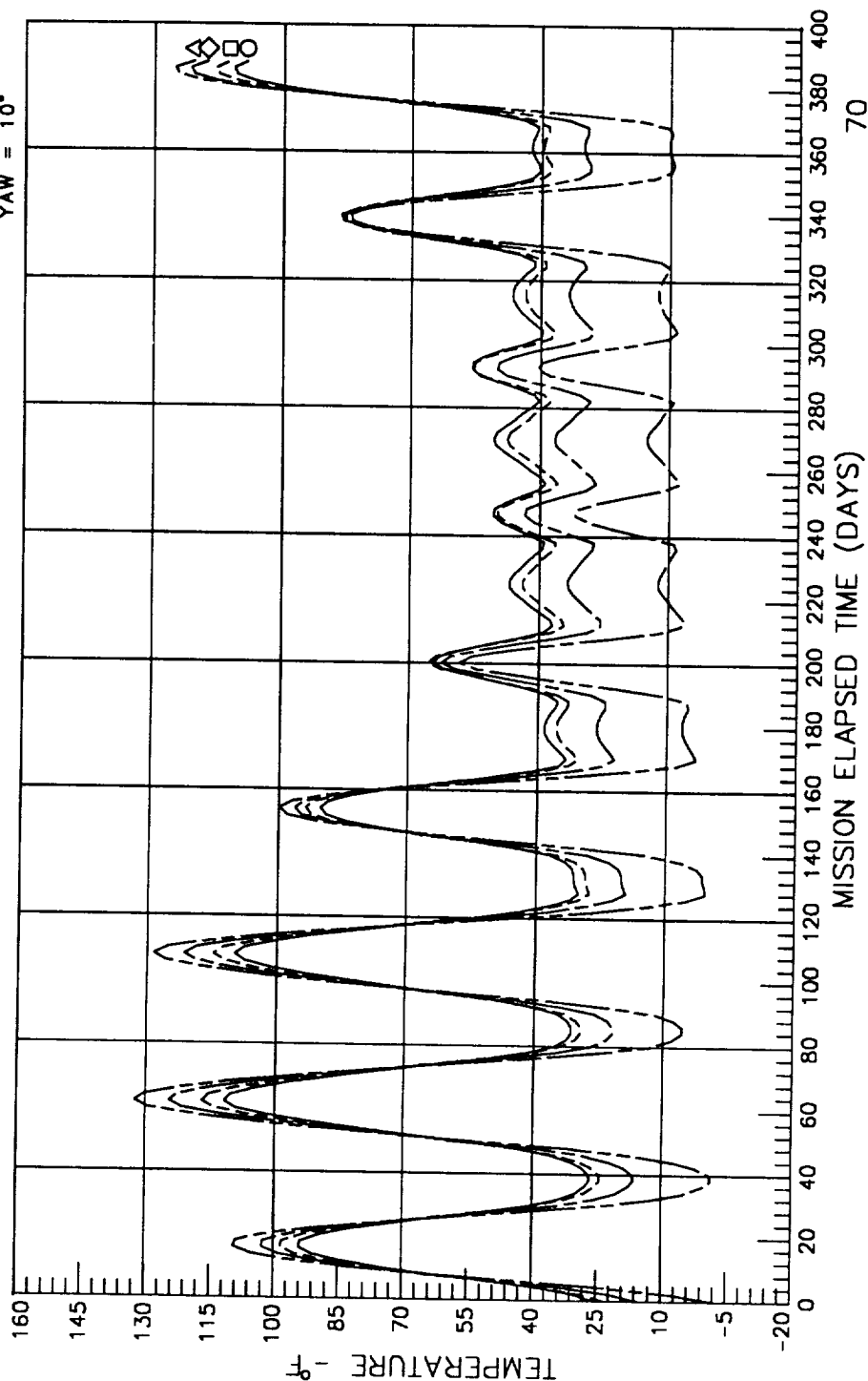
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: D12

- 48 TRAY
- 138 SURFACE
- ◇ 280 SURFACE
- △ 281 SURFACE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

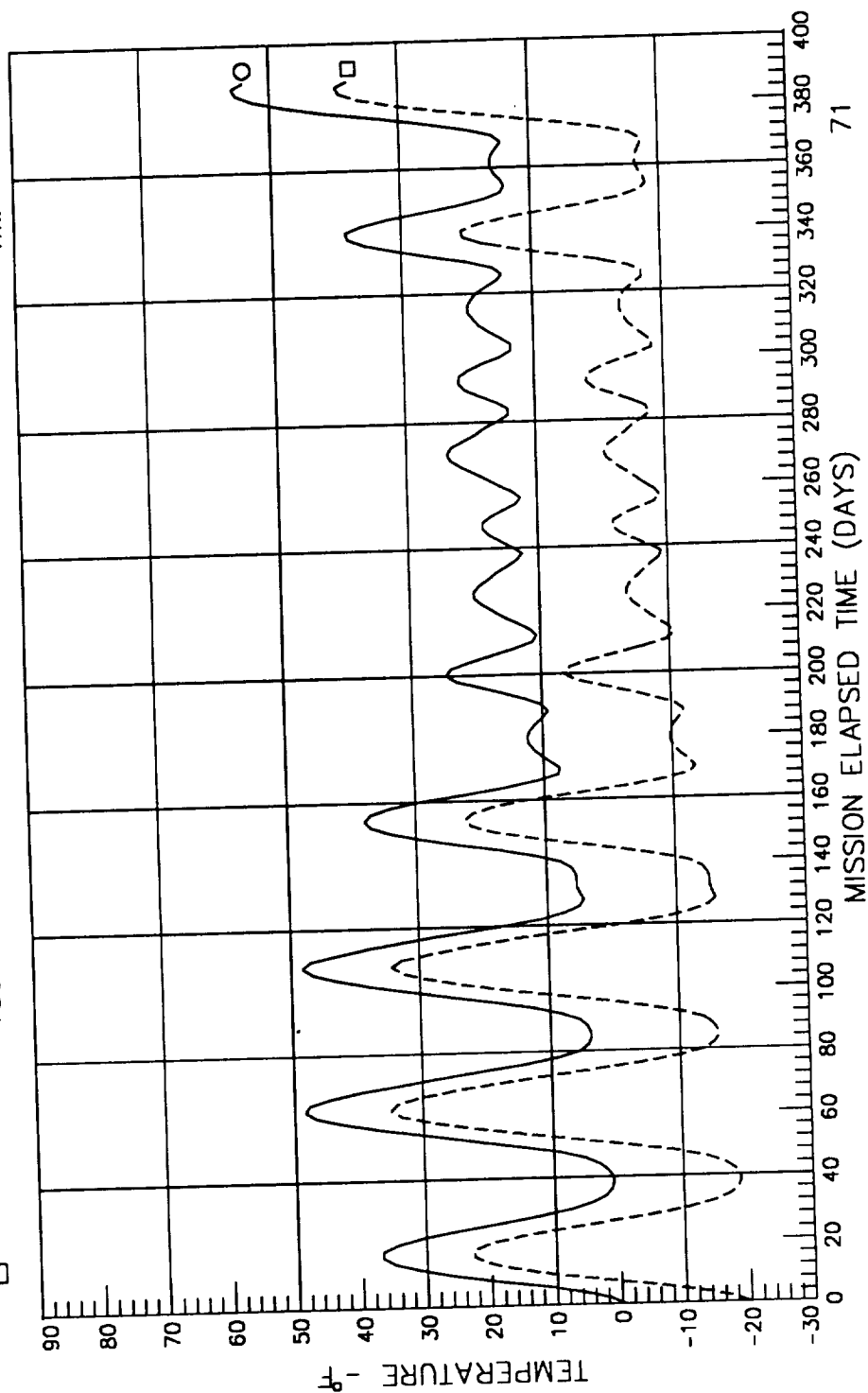


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: E12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ — 60 TRAY  
□ - - - 150 SURFACE

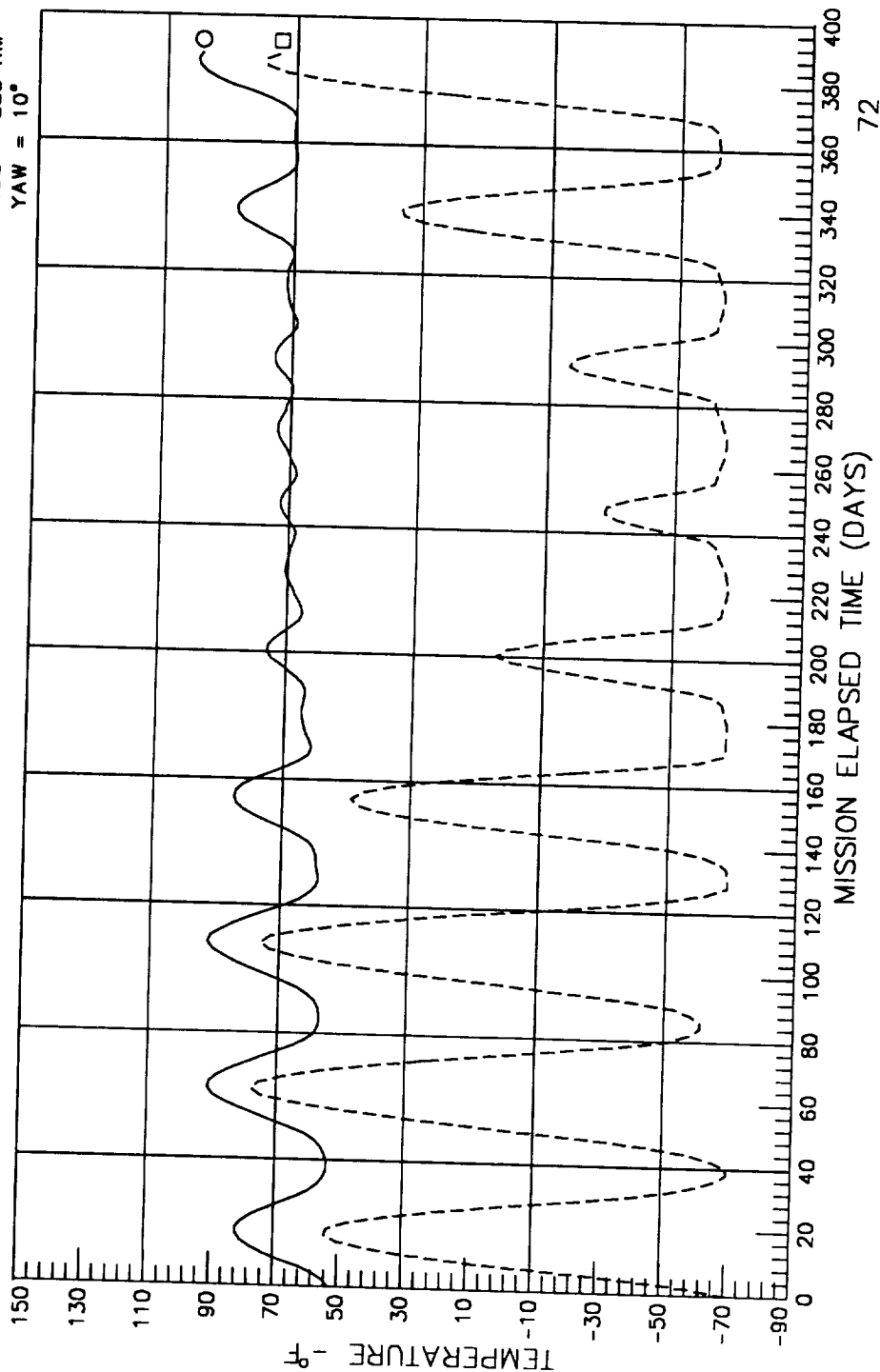


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: F12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ ——— 72 TRAY  
□ - - - 162 SURFACE





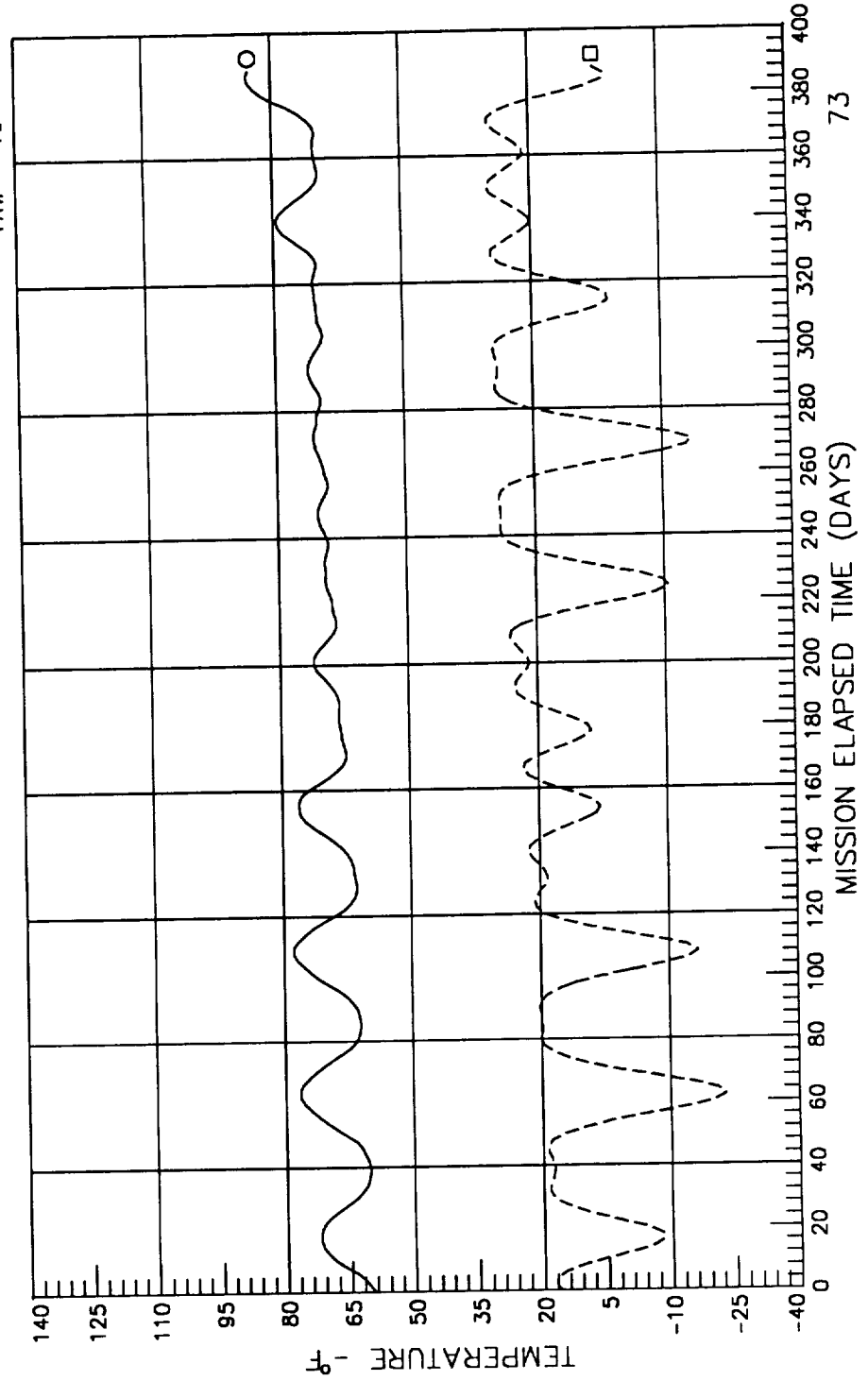
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: H1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 90 TRAY  
 □ - - - - 261 SURFACE



# LONG DURATION EXPOSURE FACILITY

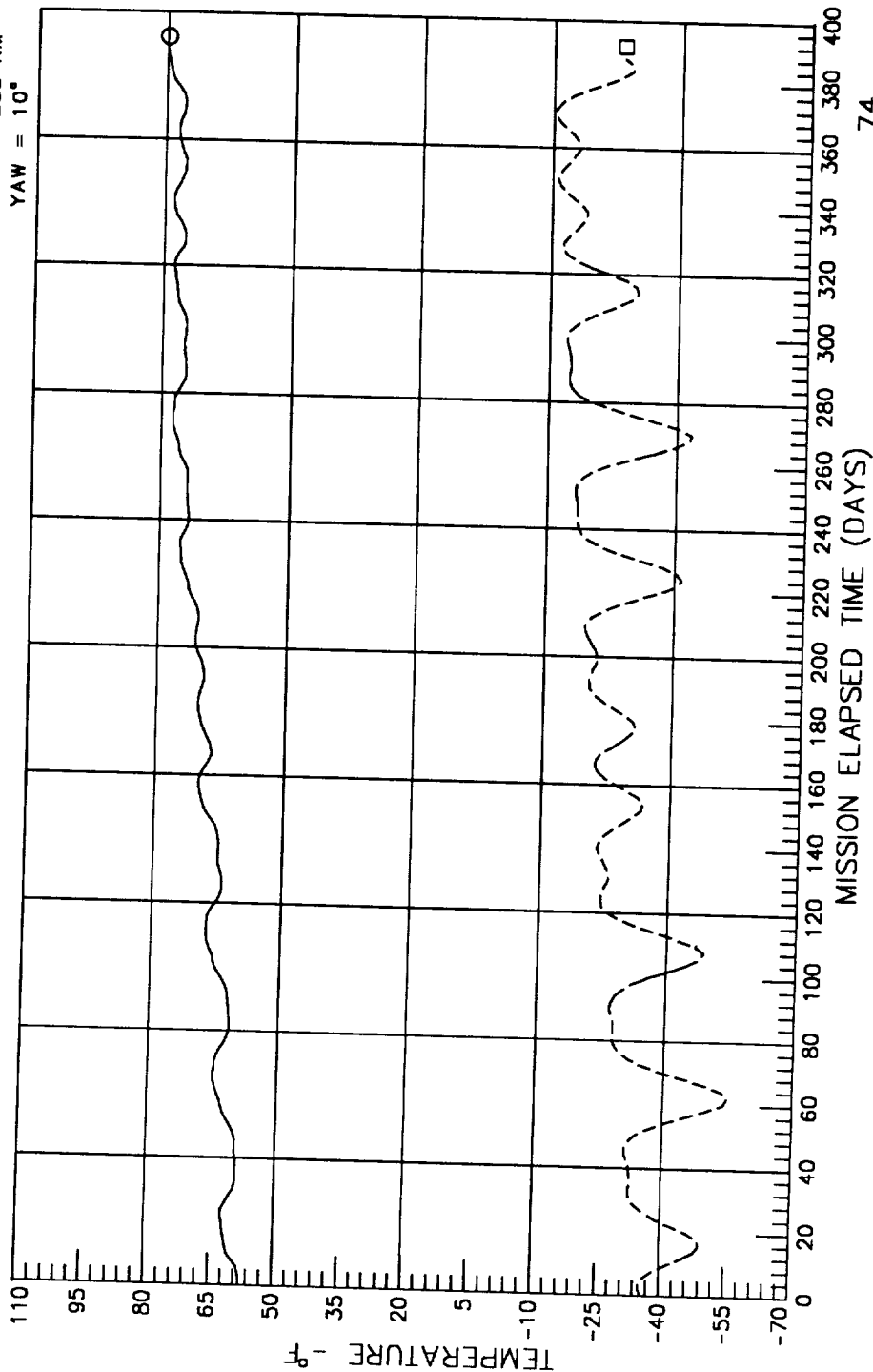
## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: H3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

88 TRAY  
 268 SURFACE

○  
 □



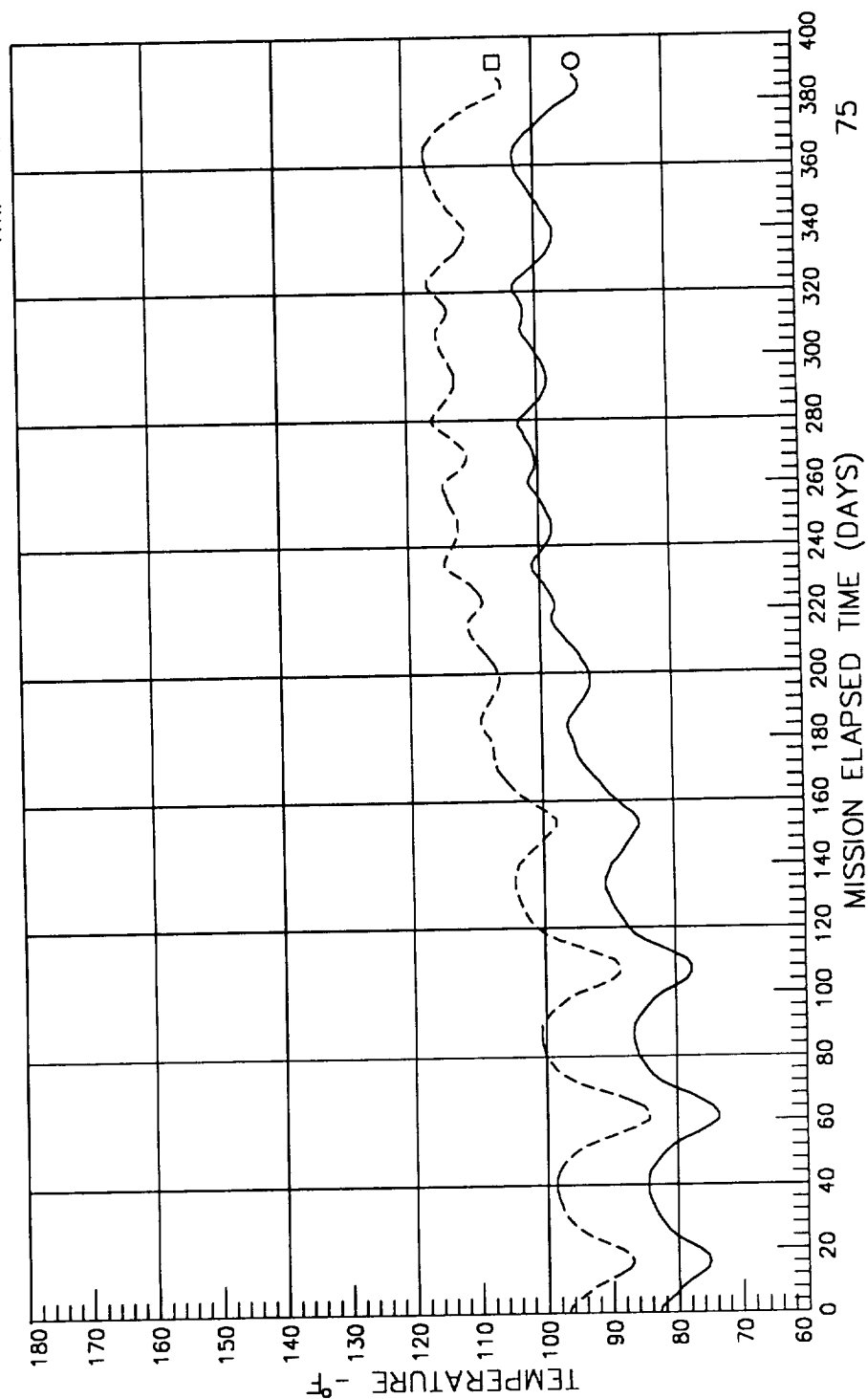
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: H5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 85 TRAY  
 □ 265 SURFACE



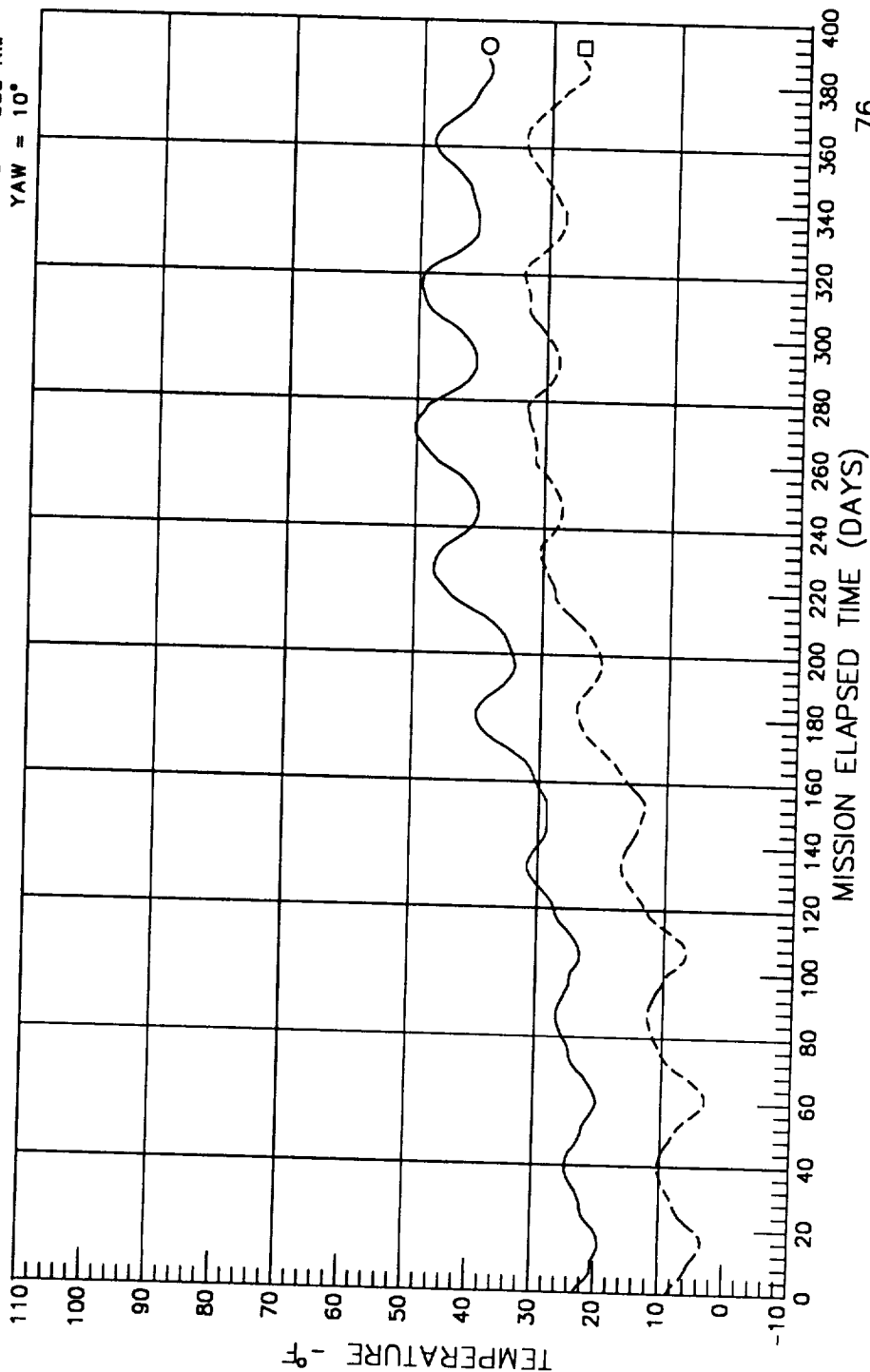
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: H6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 84 TRAY  
 □ 264 SURFACE

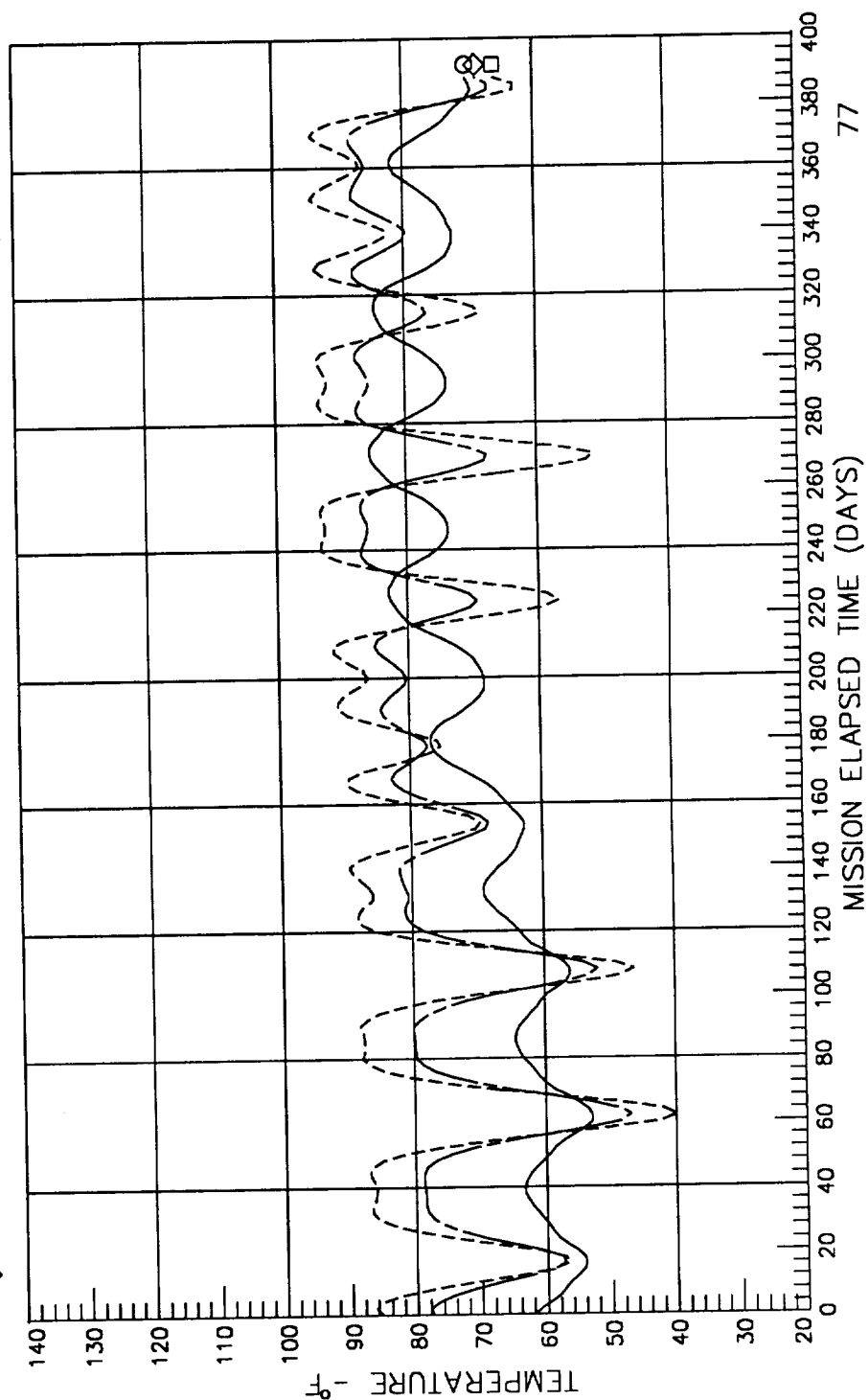


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: H7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 83 TRAY  
□ 263 SURFACE  
◇ 282 SURFACE



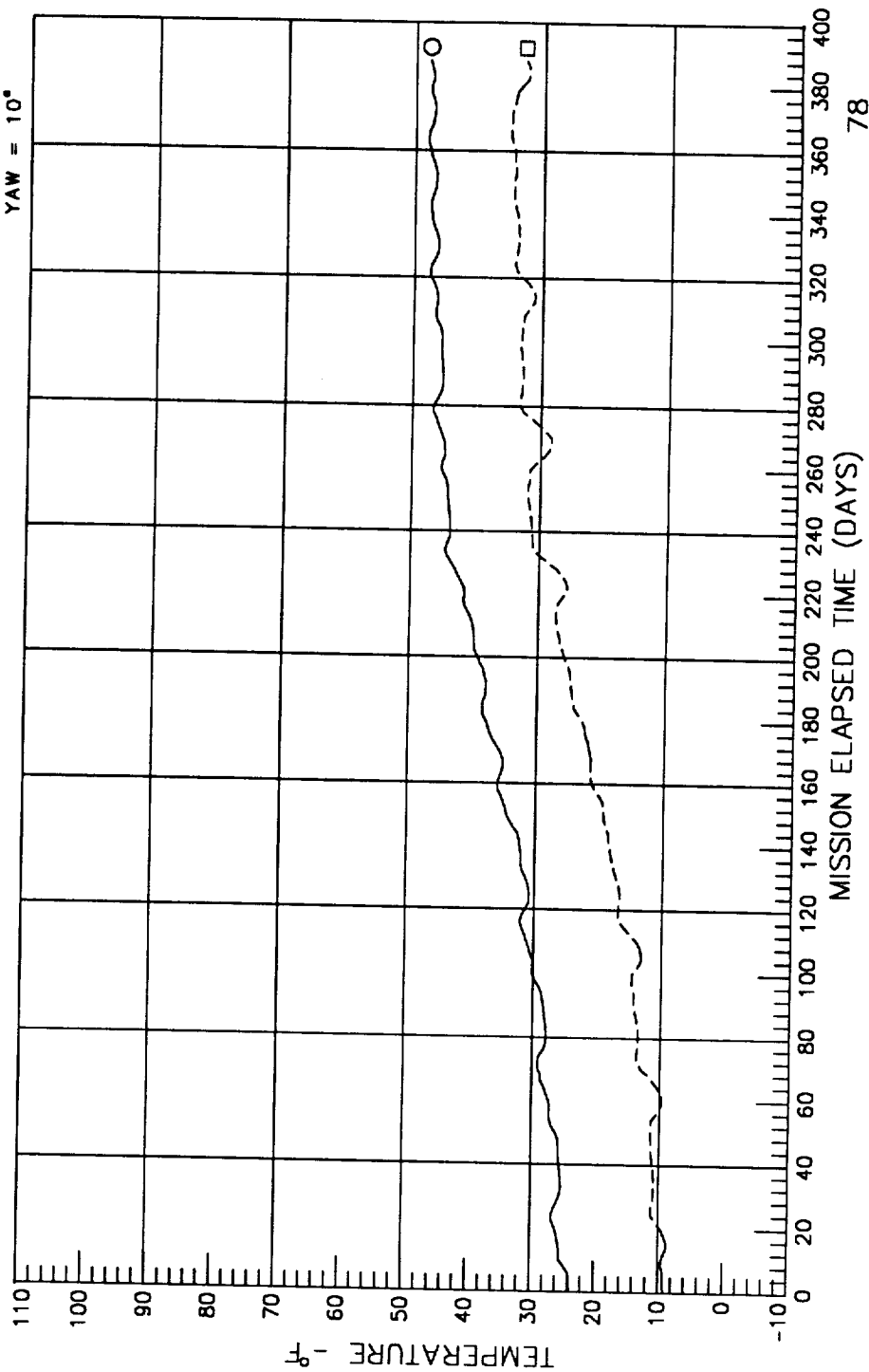
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: H9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 86 TRAY  
 □ - - - 266 SURFACE

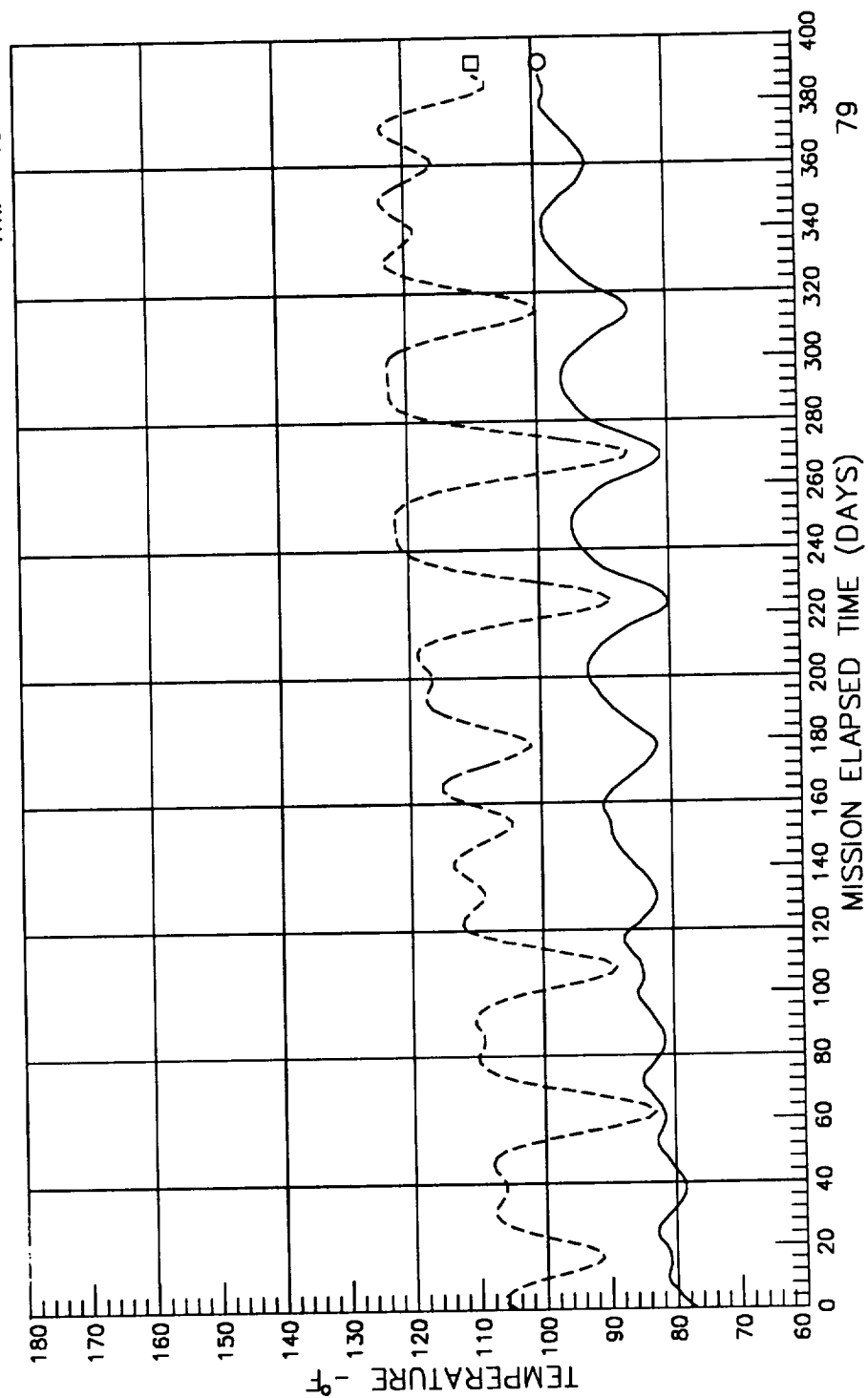


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: H11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 82 TRAY  
□ 262 SURFACE



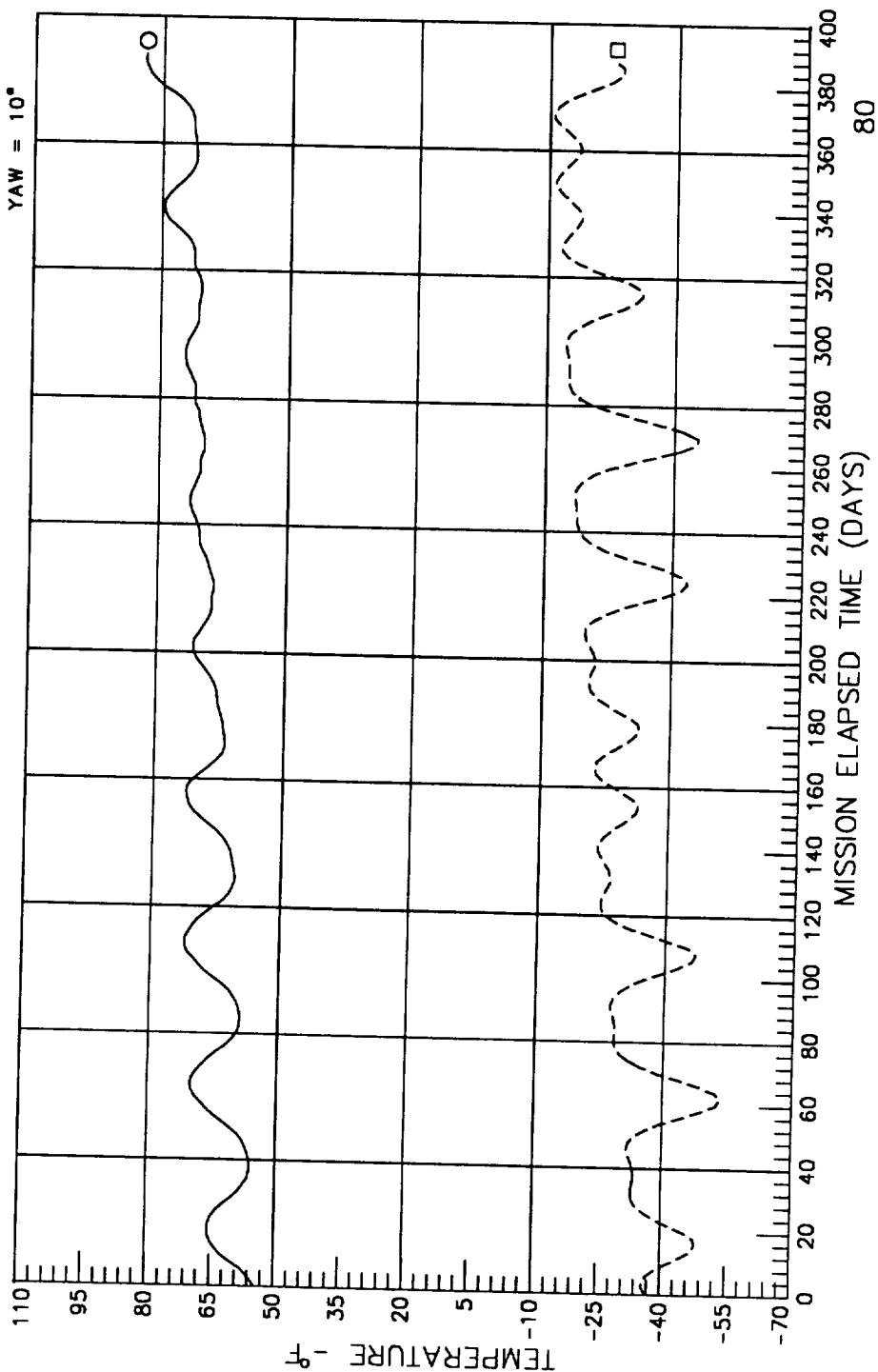
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: H12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 89 TRAY  
 □ - - - 269 SURFACE





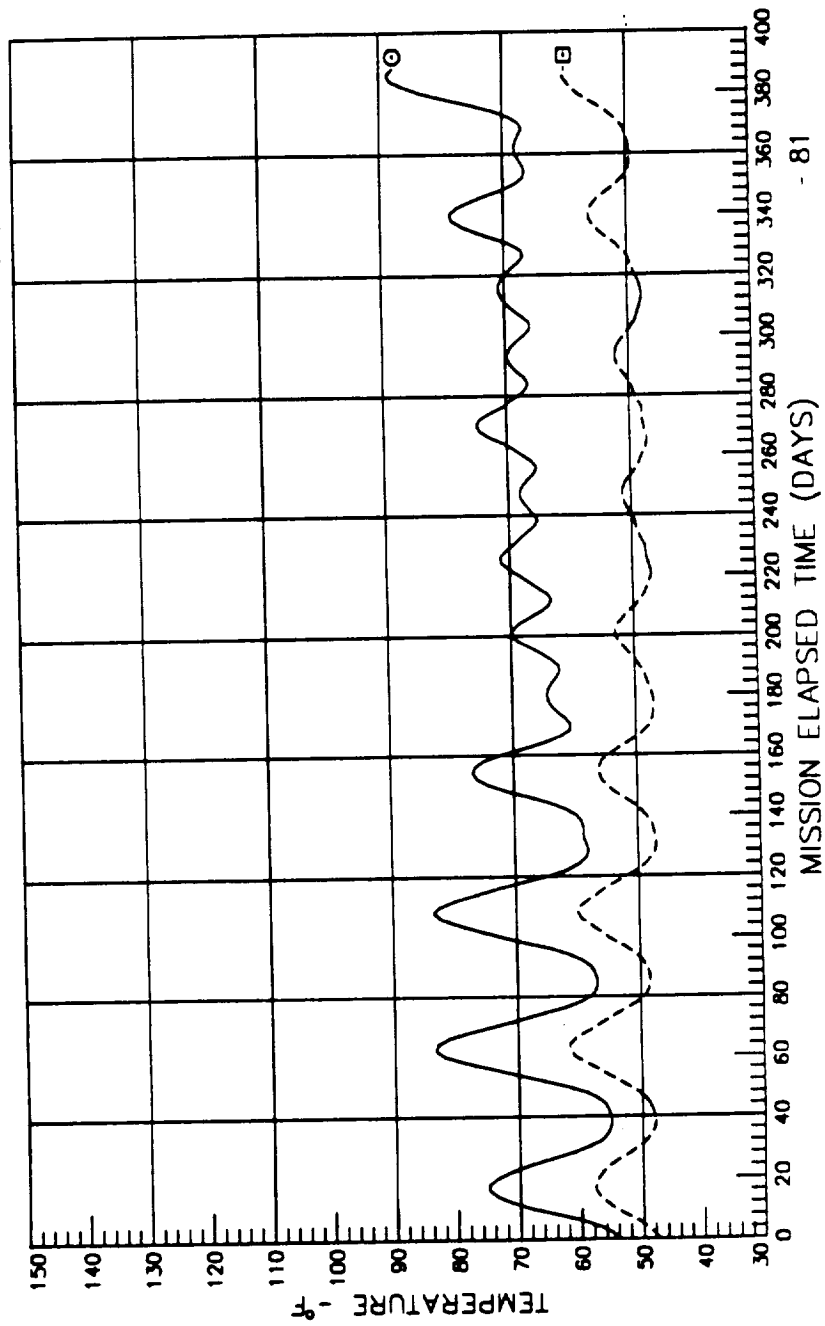
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: G2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 81 TRAY  
 □ 252 SURFACE

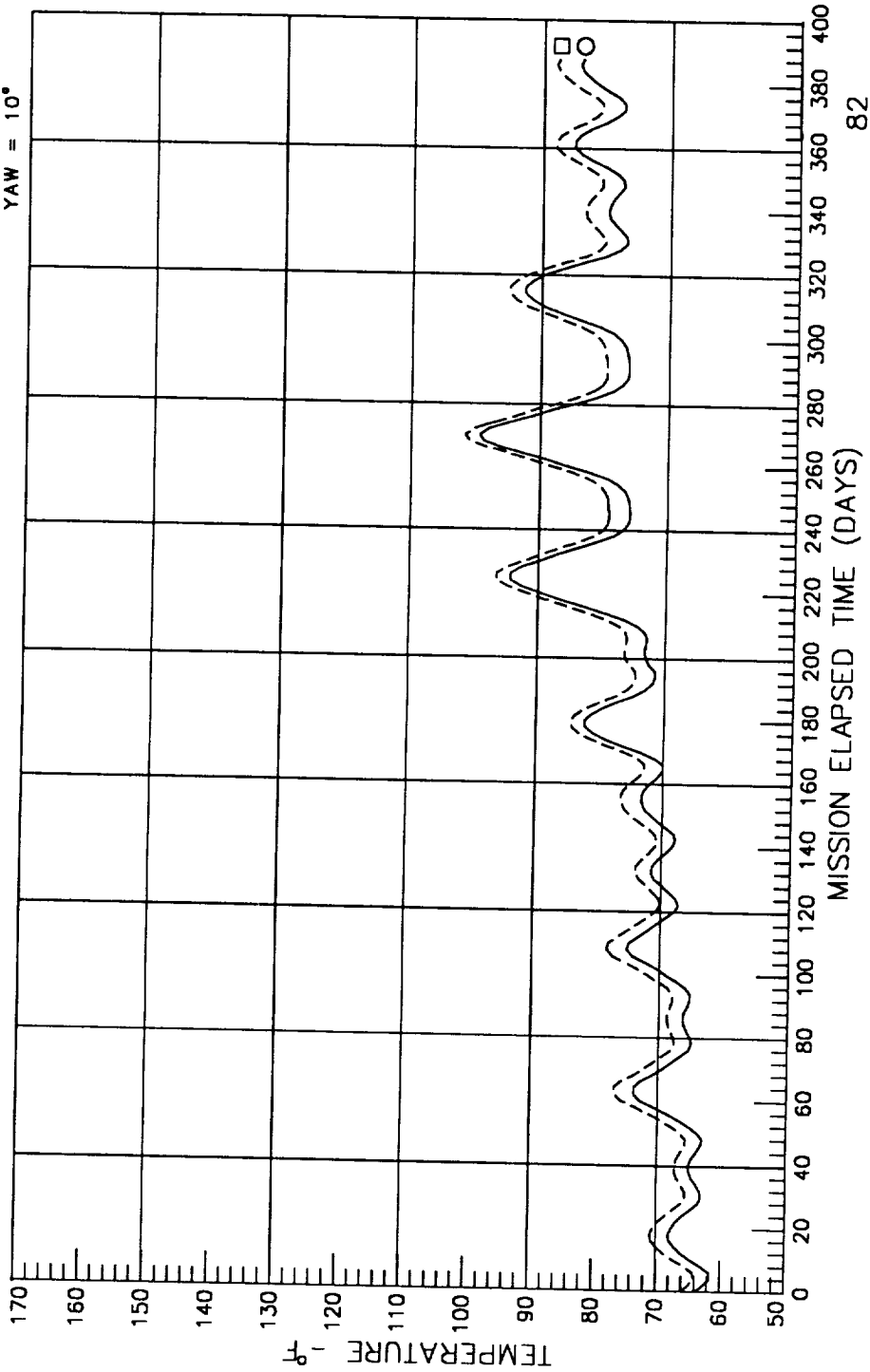


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: G4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ — 75 TRAY  
□ - - - 255 SURFACE

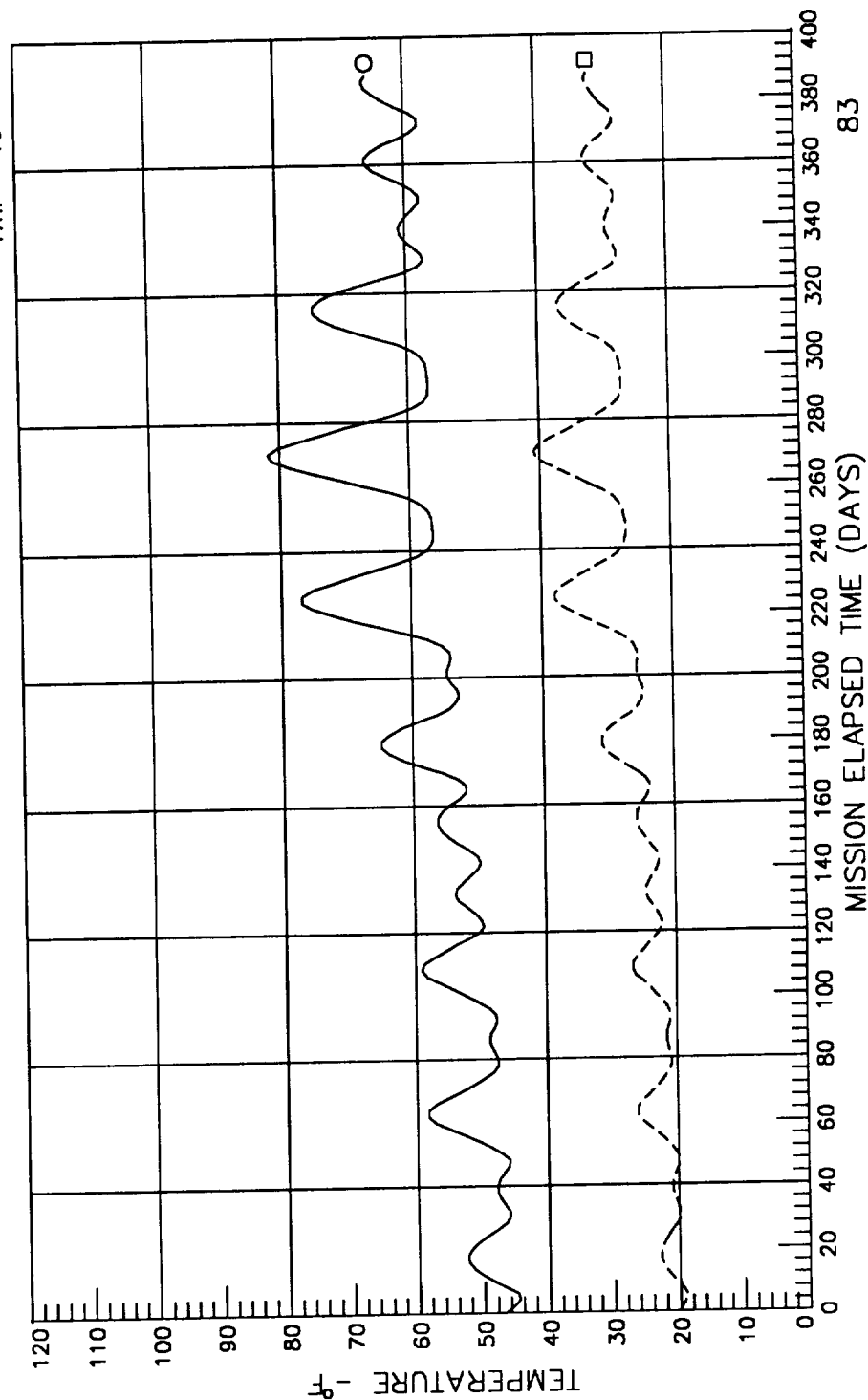


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: G6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ ——— 74 TRAY  
□ - - - - 254 SURFACE



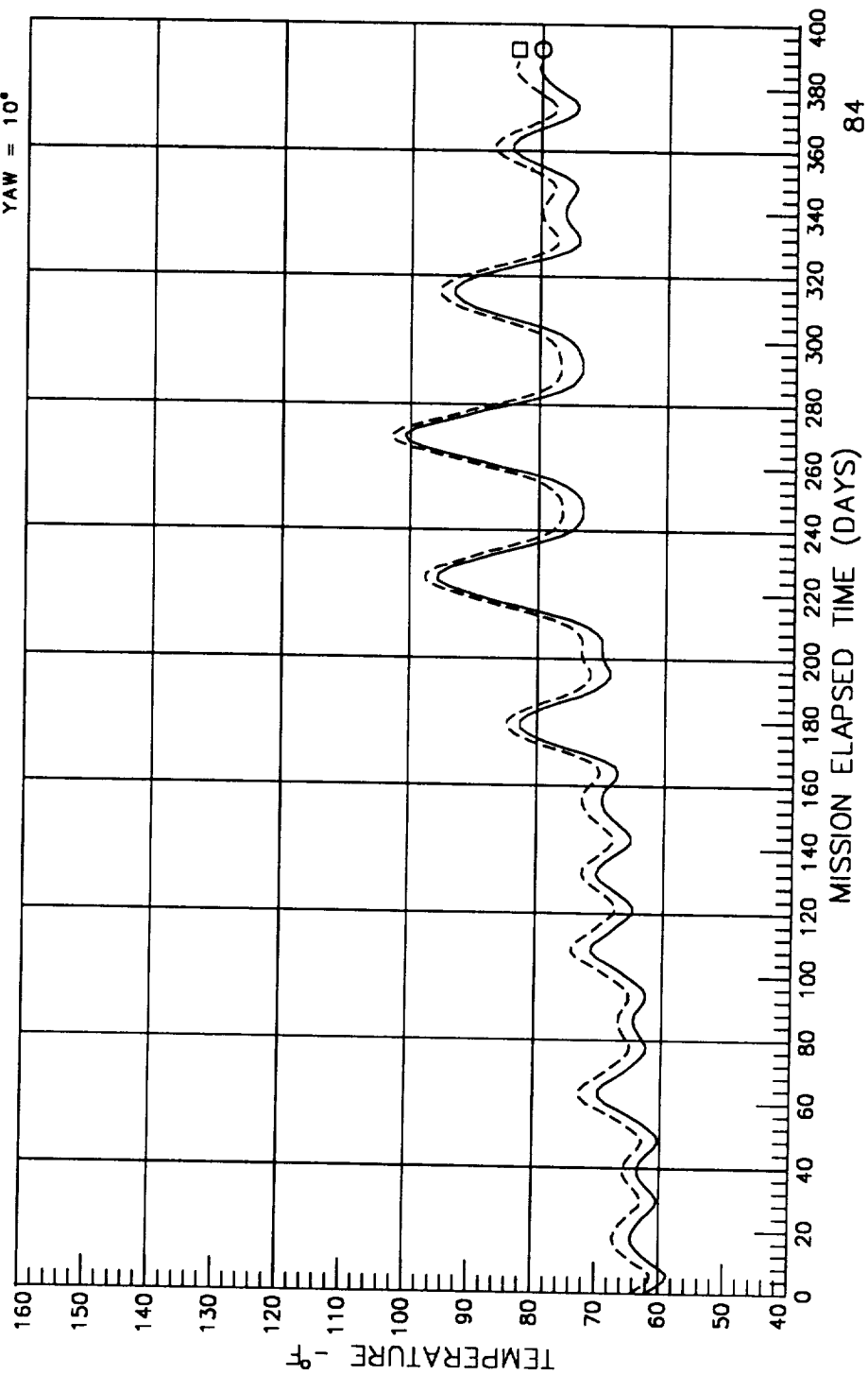
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LOCATION: G8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 73 TRAY  
 □ - - - 253 SURFACE

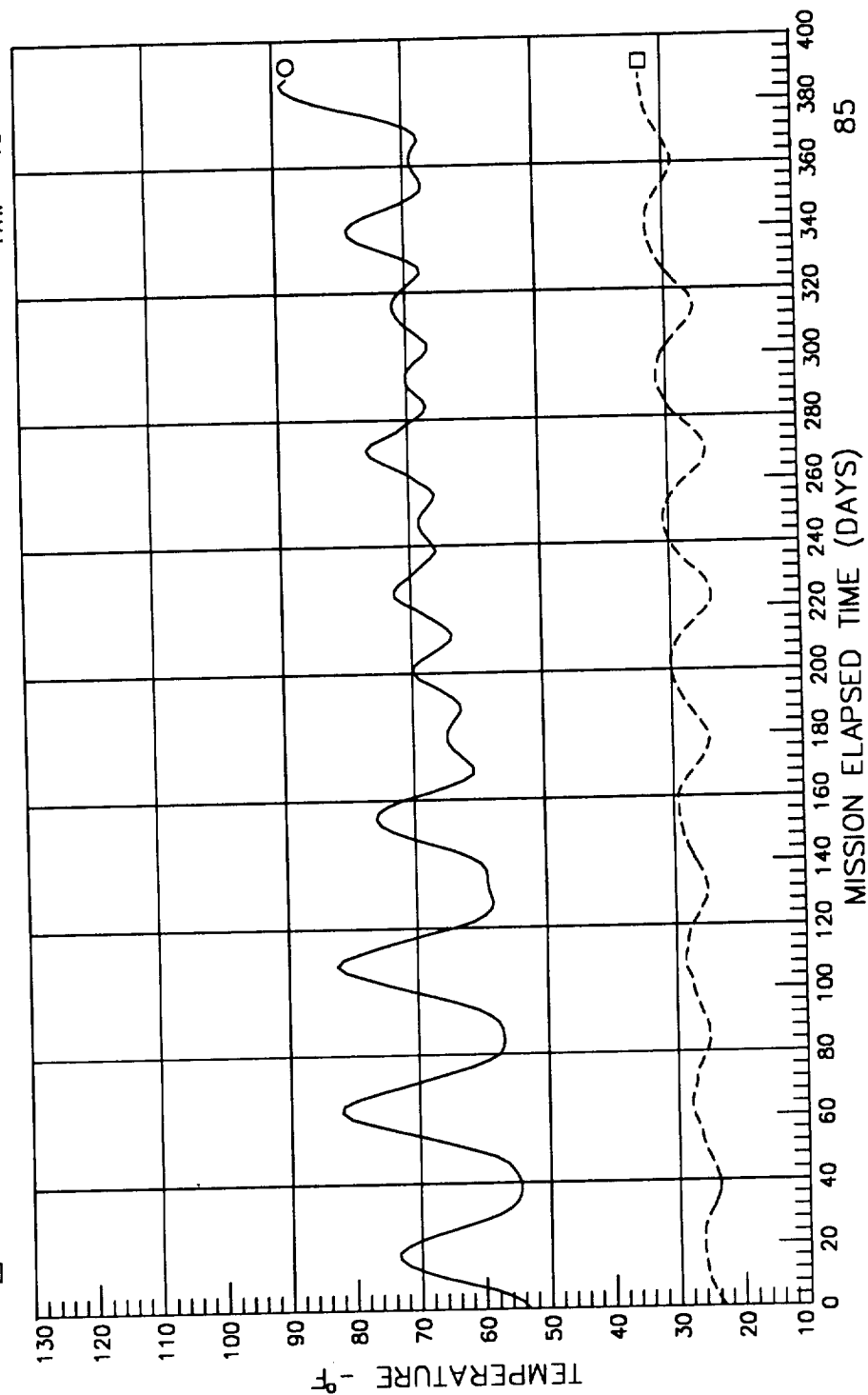


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
LOCATION: G10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ 79 TRAY  
□ 259 SURFACE



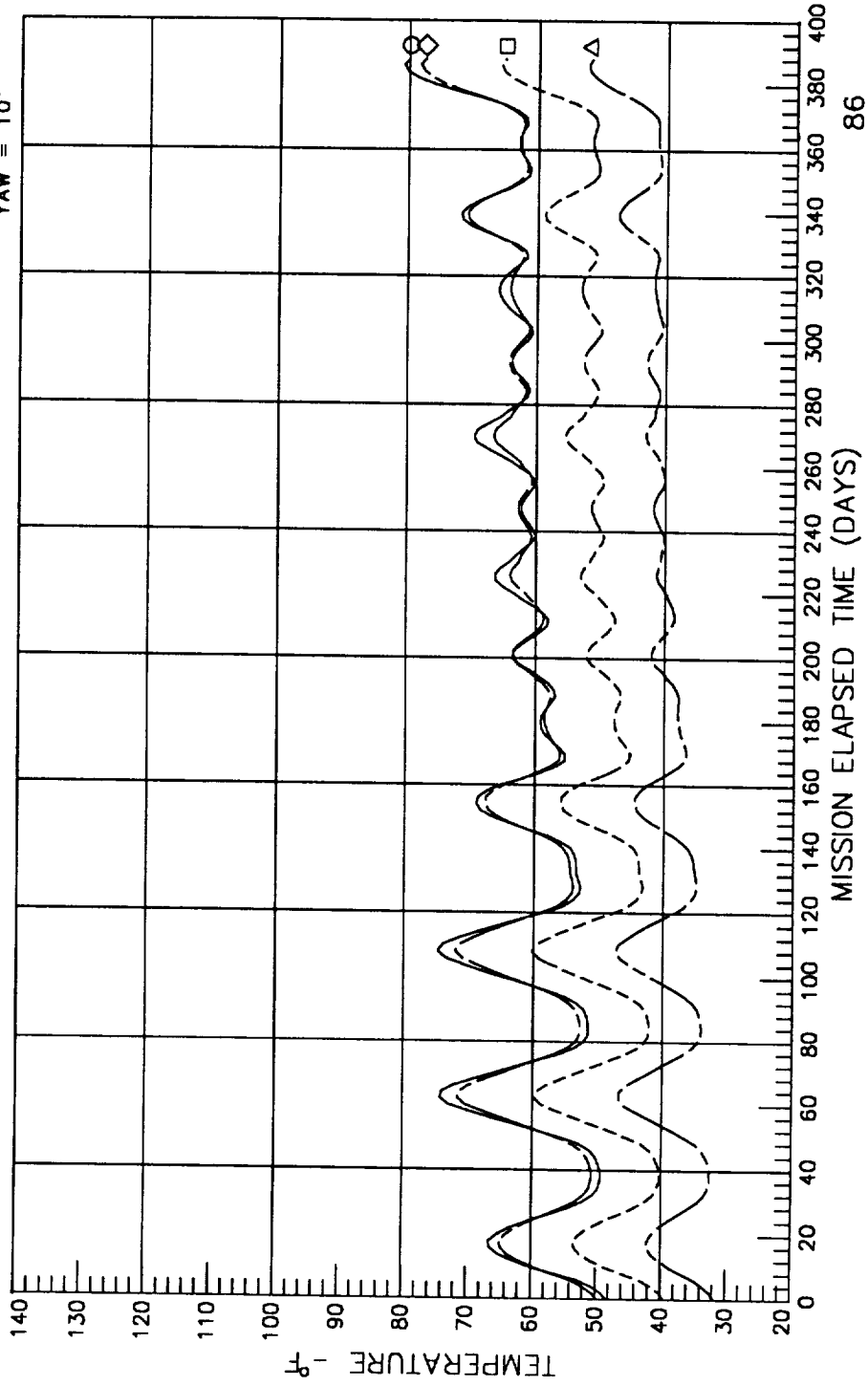
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

LOCATION: G12

- 80 TRAY
- 260 SURFACE
- ◇ 283 SURFACE
- △ 284 SURFACE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

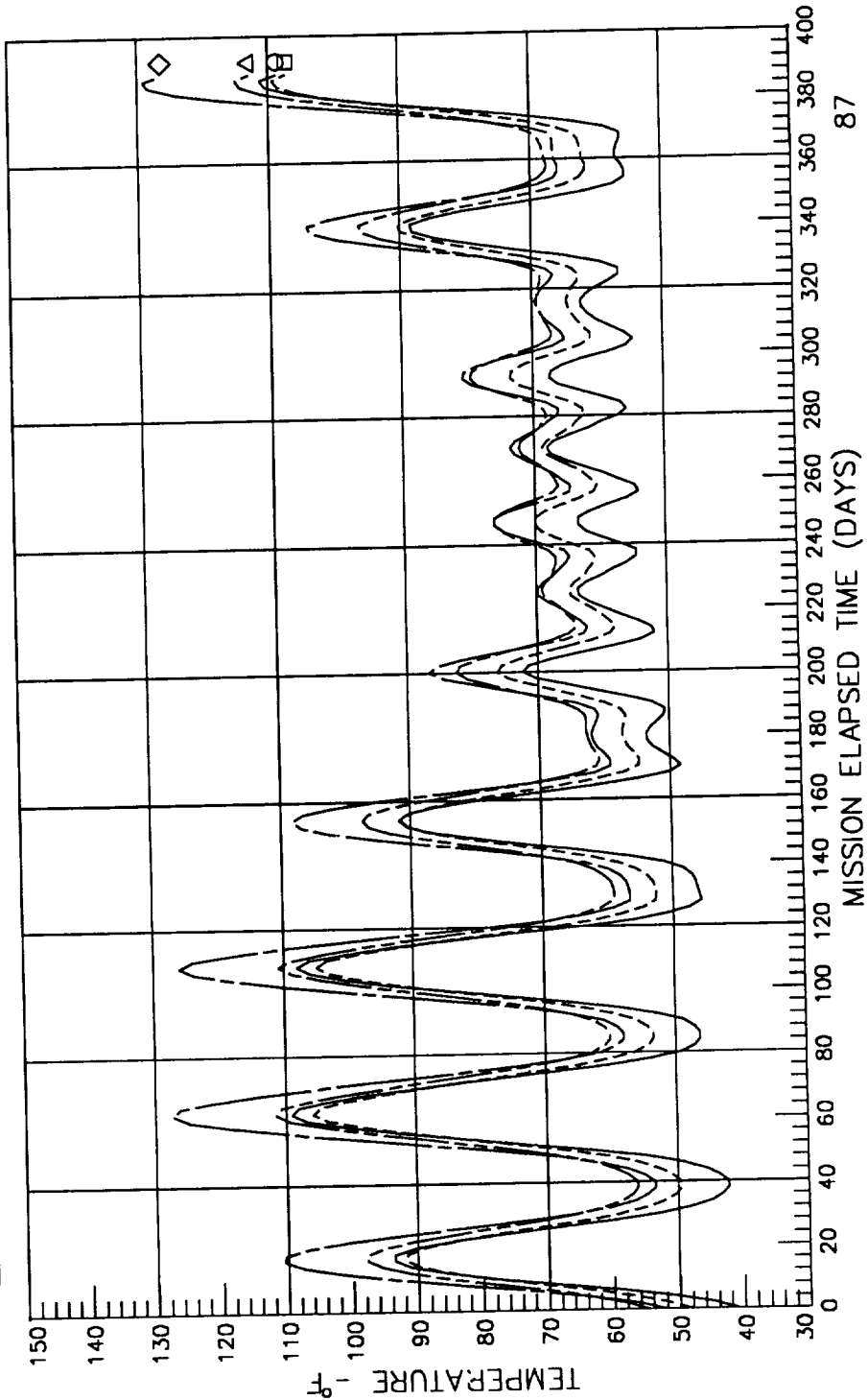
DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

163 LONGERON 12-1  
 164 LONGERON 1-2  
 175 END LONGRN 12-1  
 176 END LONGRN 1-2

○  
 □  
 ◇  
 △



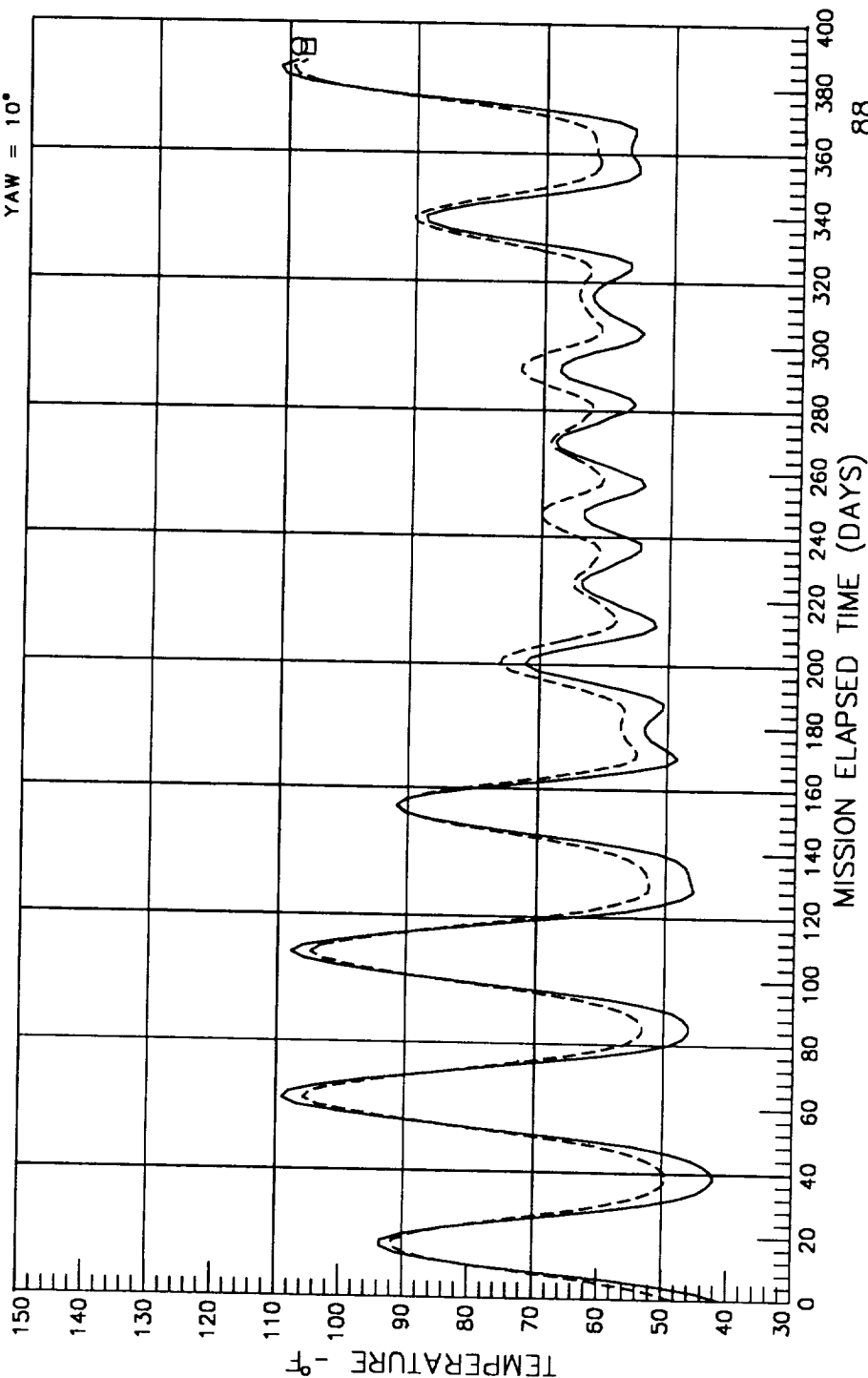
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC B1 & C1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 163 LONGERON 12-1  
 □ 164 LONGERON 1-2





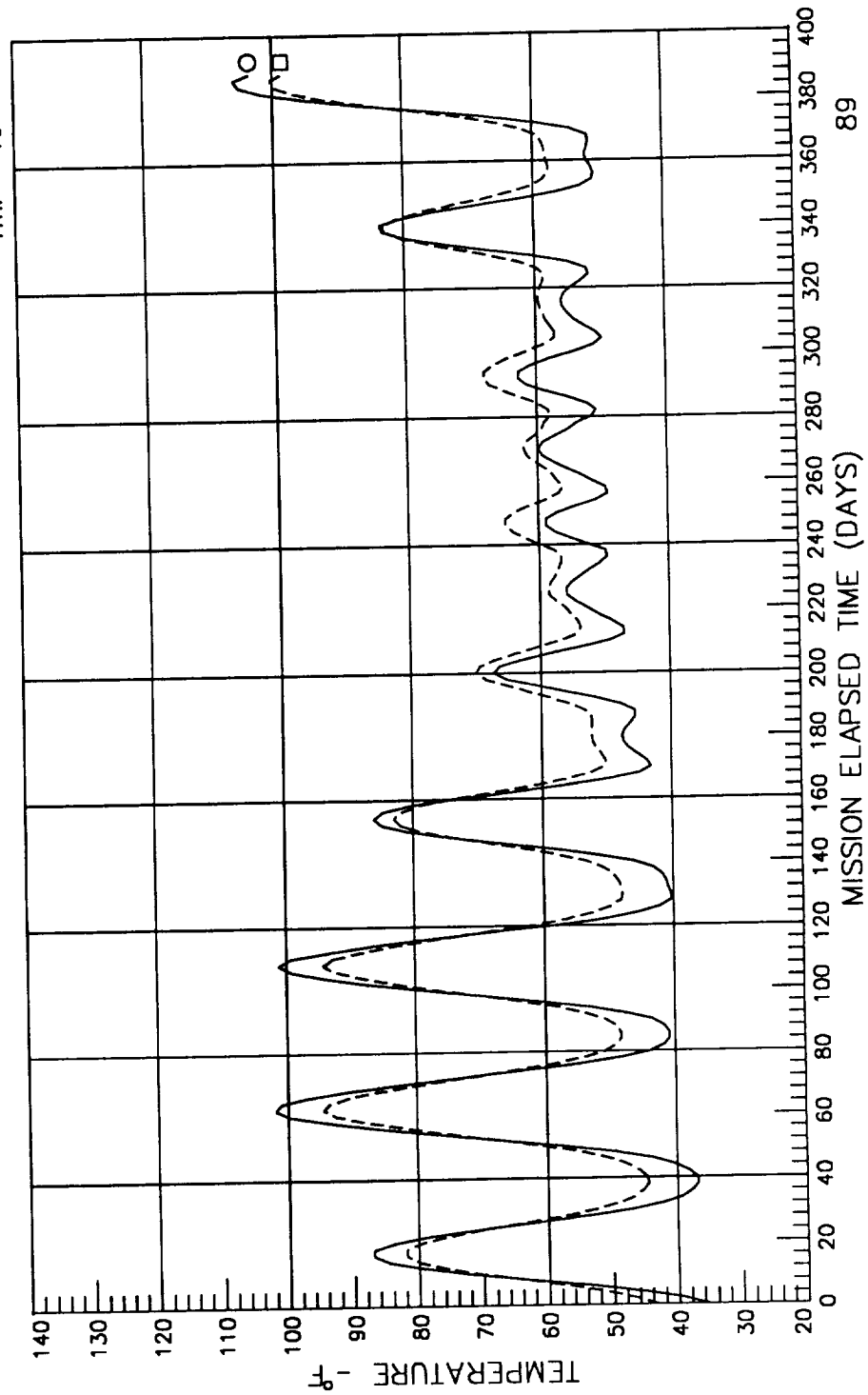
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC D1 & E1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 240 LONGERON 12-1  
 □ 241 LONGERON 1-2



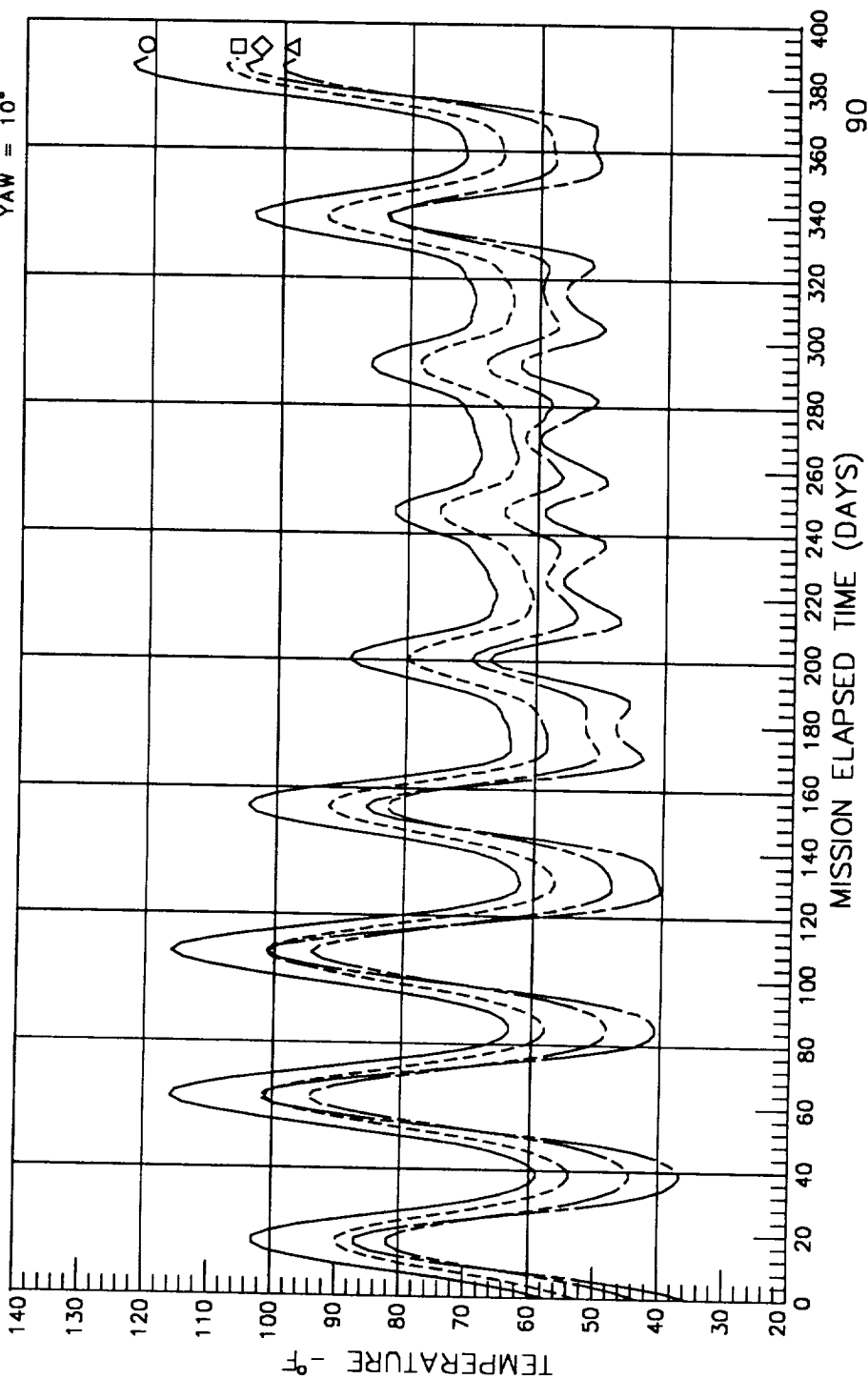
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F1

- — 187 END LONGRN 12-1
- - - 188 END LONGRN 1-2
- ◇ — 240 LONGERON 12-1
- △ - - 241 LONGERON 1-2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

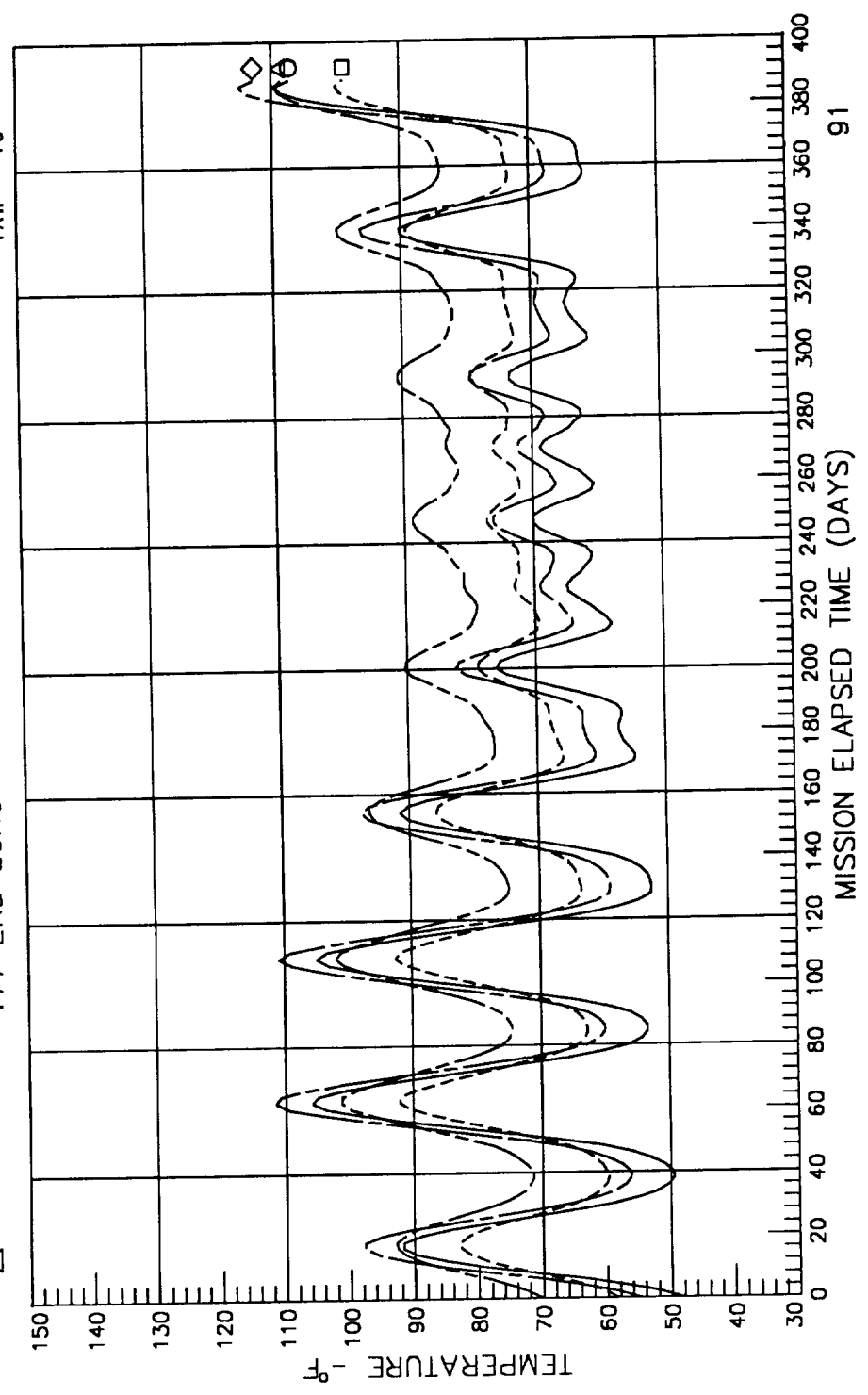


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A2

- 164 LONGERON 1-2
  - 165 LONGERON 2-3
  - ◇ 176 END LONGRN 1-2
  - △ 177 END LONGRN 2-3
- SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

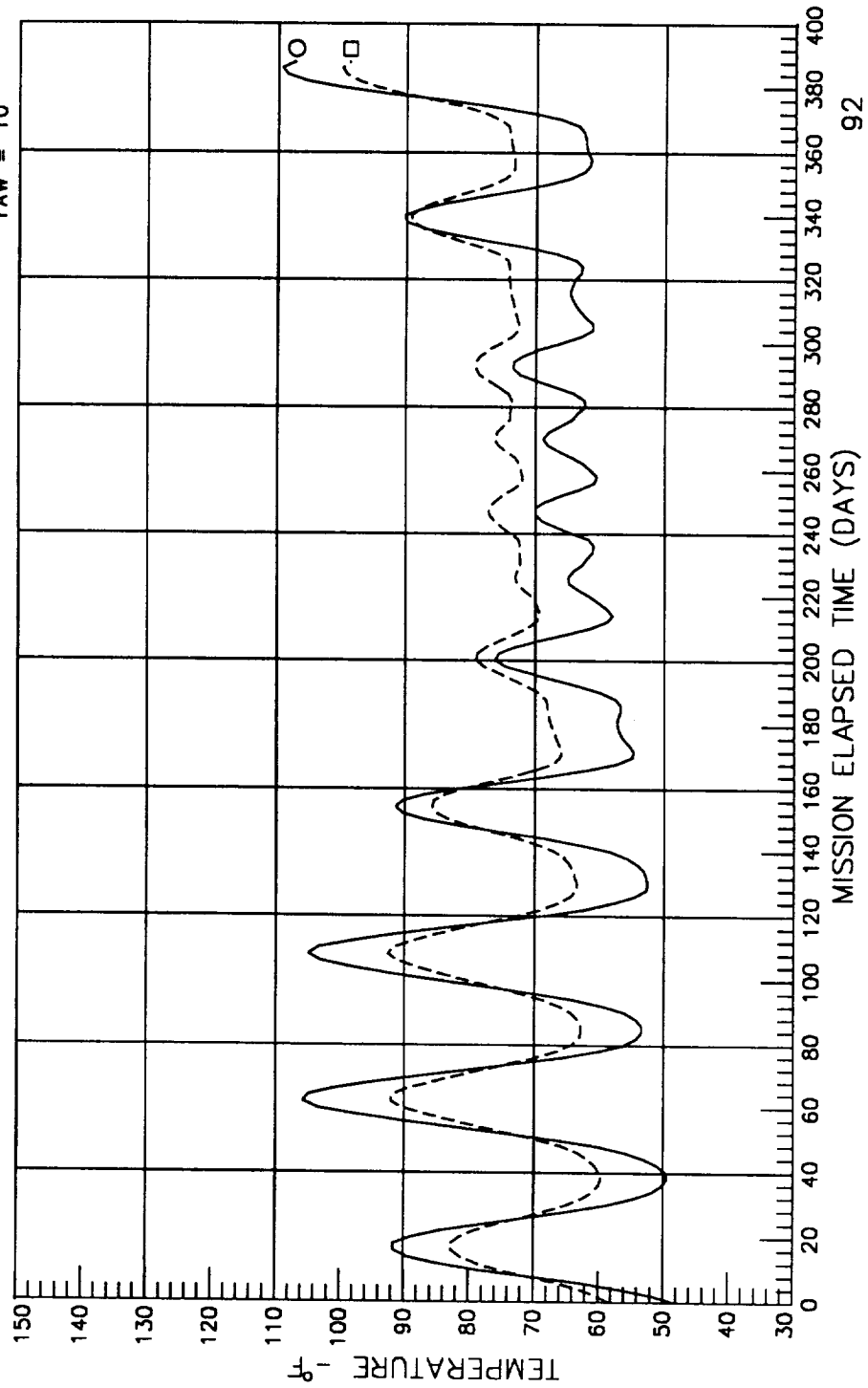
DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC B2 & C2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

164 LONGERON 1-2  
 165 LONGERON 2-3

○ ———  
 □ - - - -



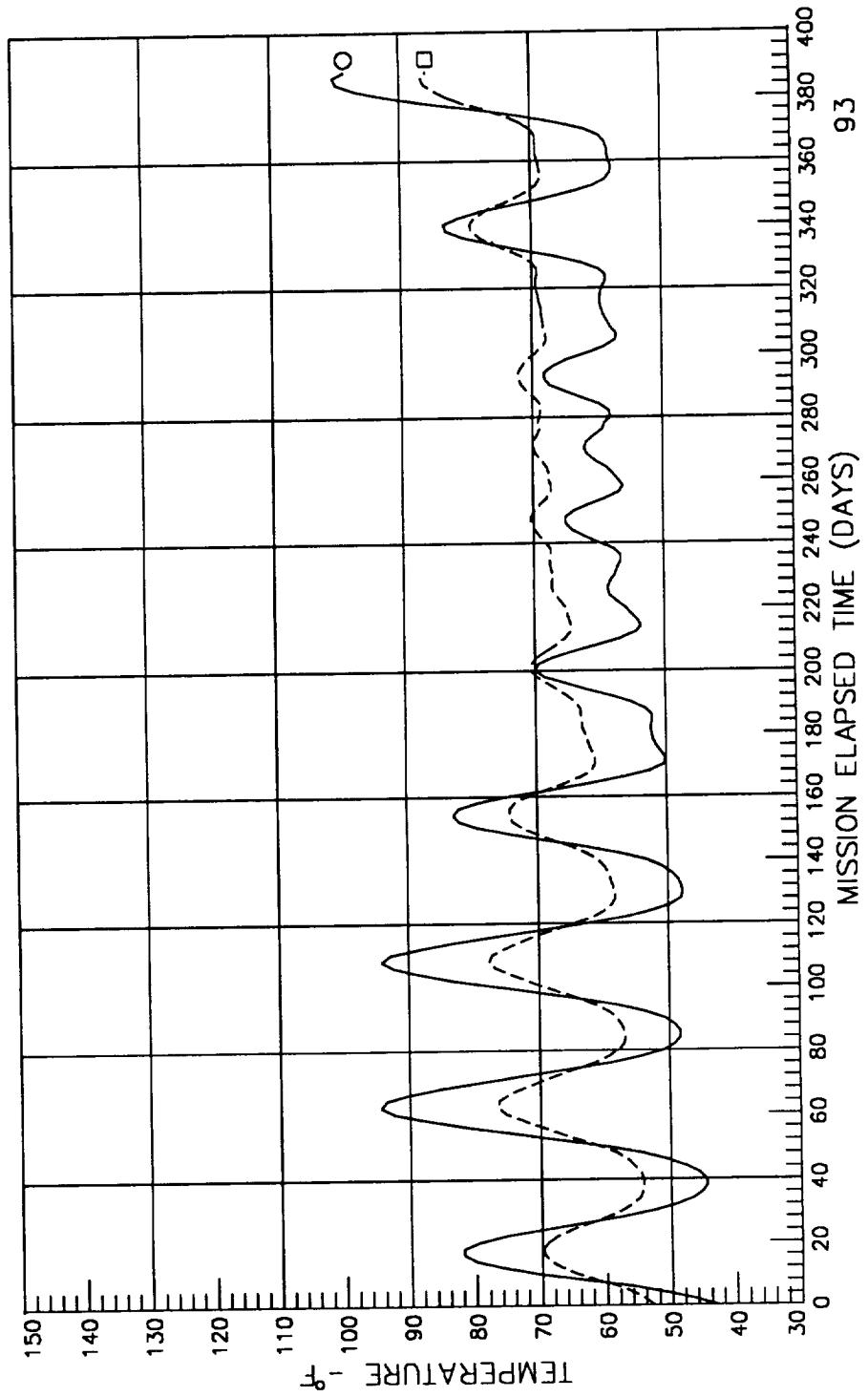
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC D2 & E2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 241 LONGERON 1-2  
 □ 242 LONGERON 2-3



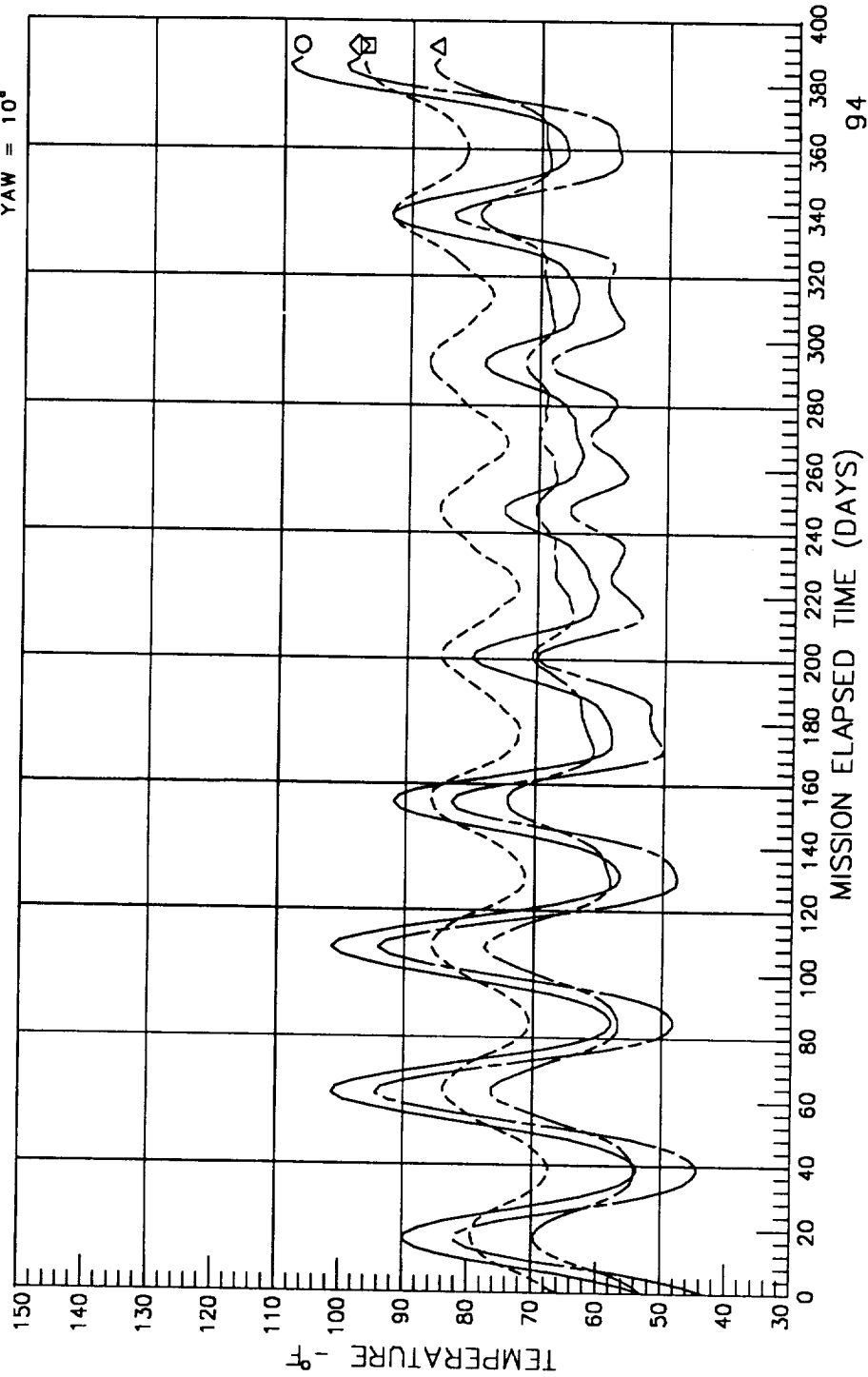
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F2

- ——— 188 END LONGRN 1-2
- - - - 189 END LONGRN 2-3
- ◇ ——— 241 LONGERON 1-2
- △ ——— 242 LONGERON 2-3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



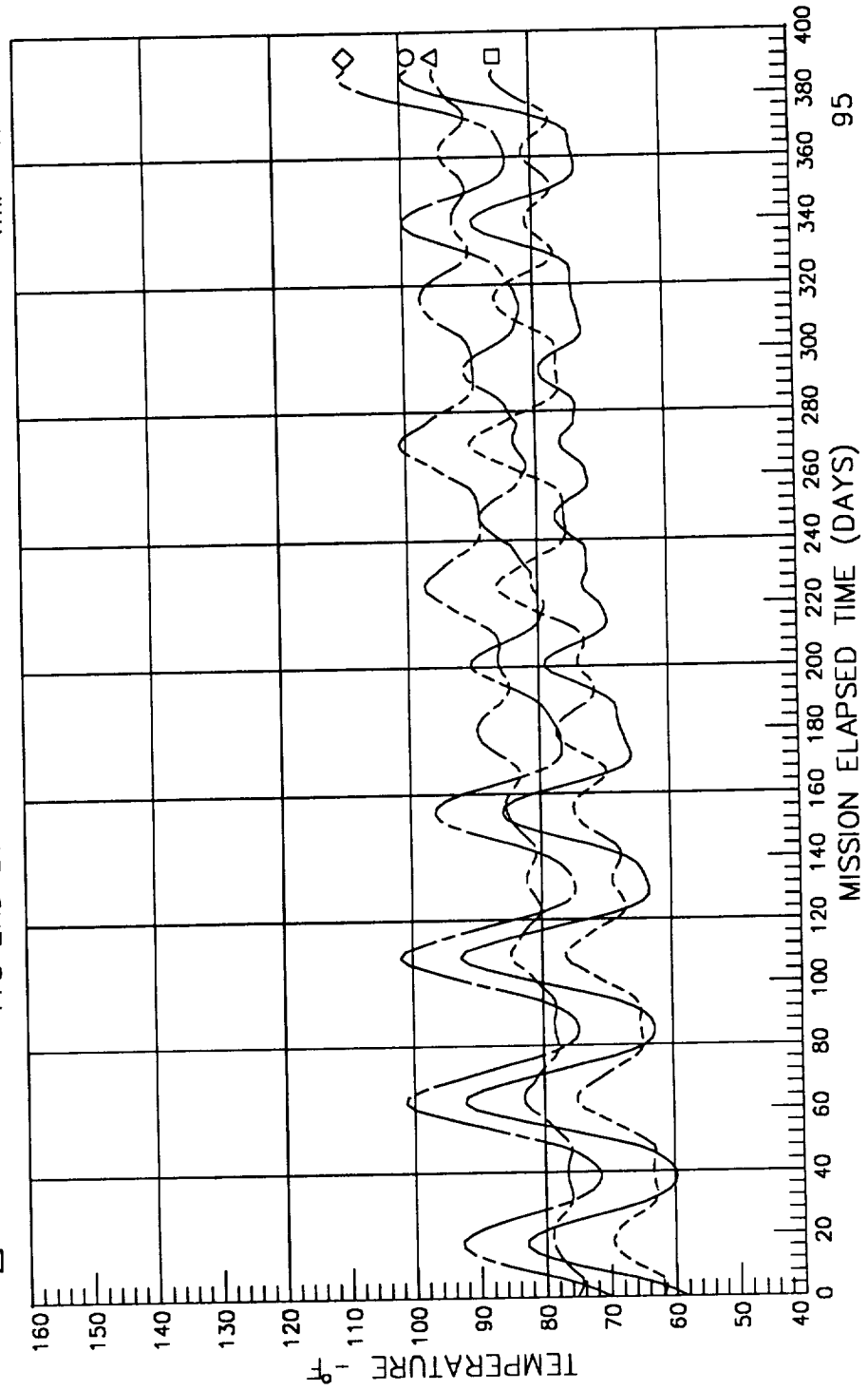
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A3

- — 165 LONGERON 2 -3
- - - - 166 LONGERON 3-4
- ◇ — 177 END LONGRN 2-3
- △ - - - 178 END LONGRN 3-4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



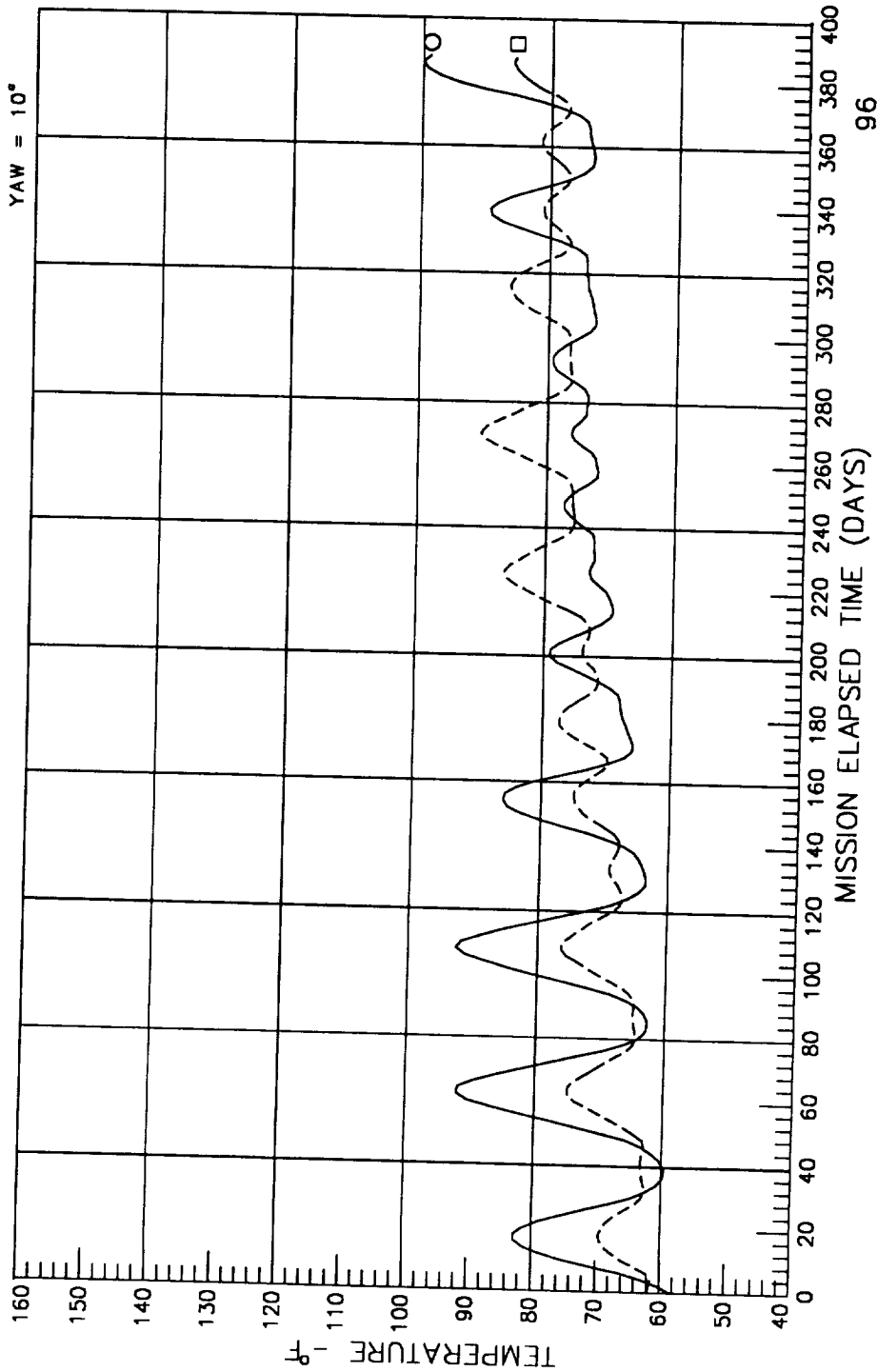
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC B3 & C3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 165 LONGERON 2-3  
 □ - - - 166 LONGERON 3-4





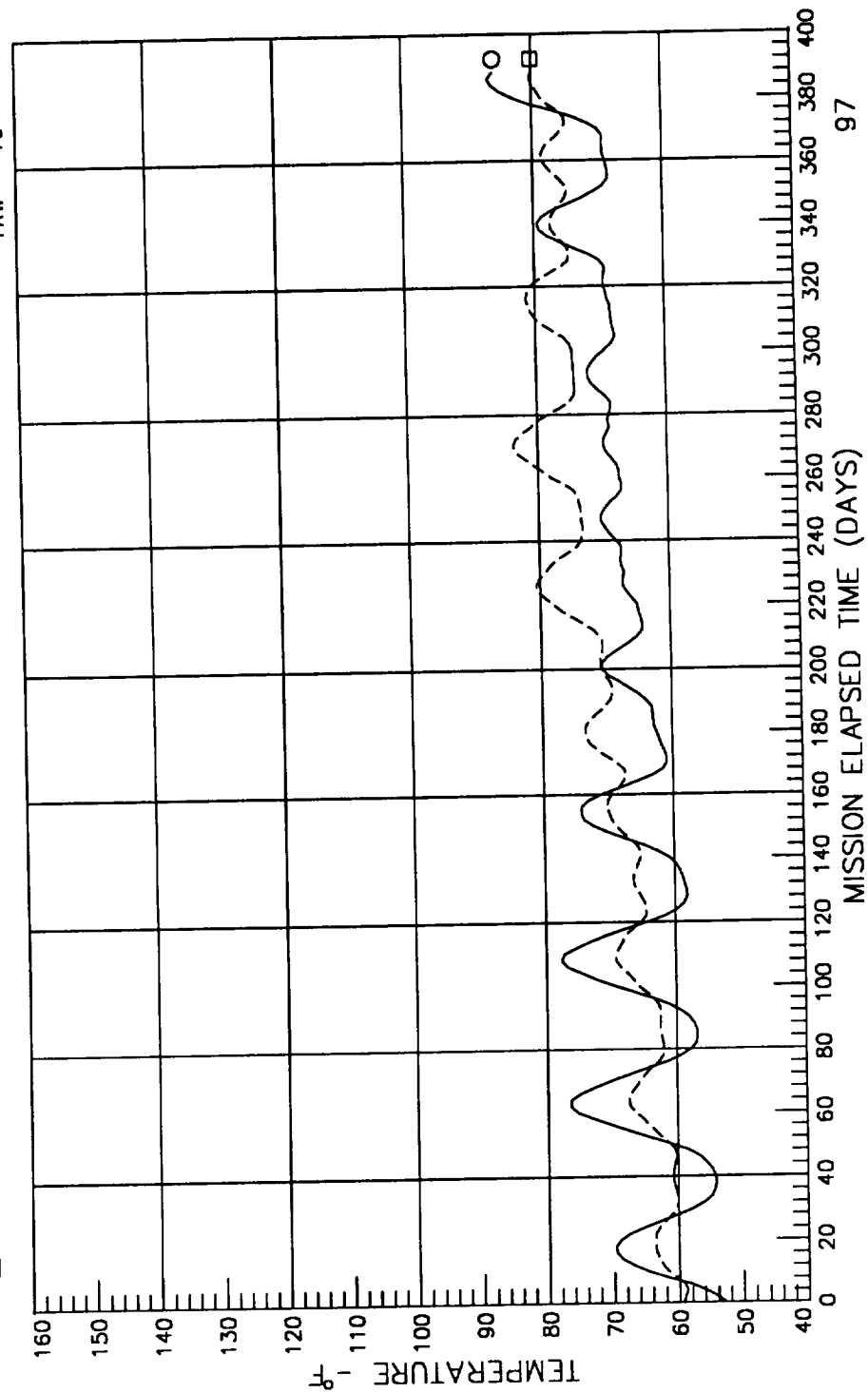
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC D3 & E3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 242 LONGERON 2-3  
 □ - - - 243 LONGERON 3-4



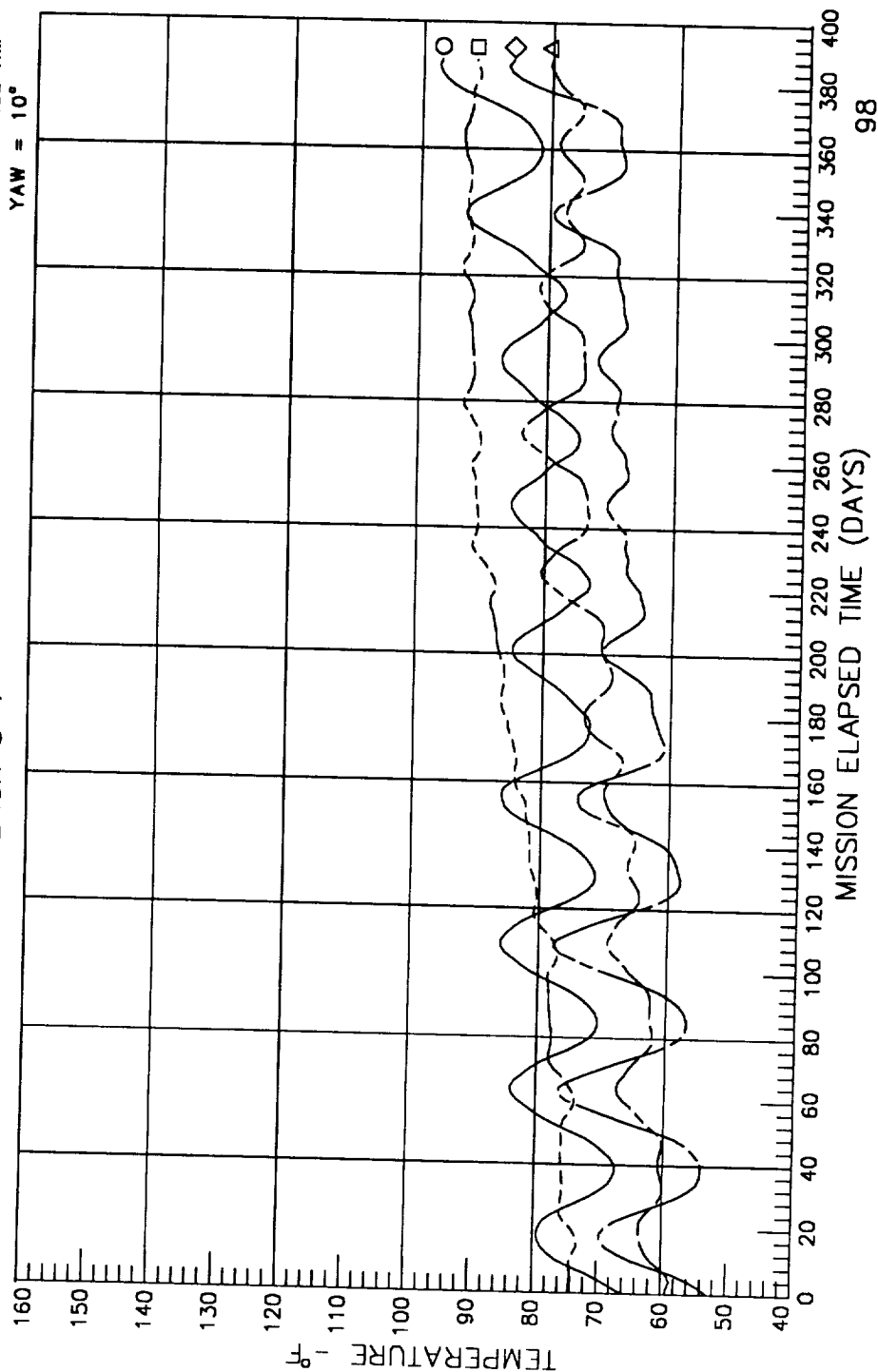
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F3

- — 189 END LONGRN 2-3
- - - 190 END LONGRN 3-4
- ◇ — 242 LONGERON 2-3
- △ - - 243 LONGERON 3-4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



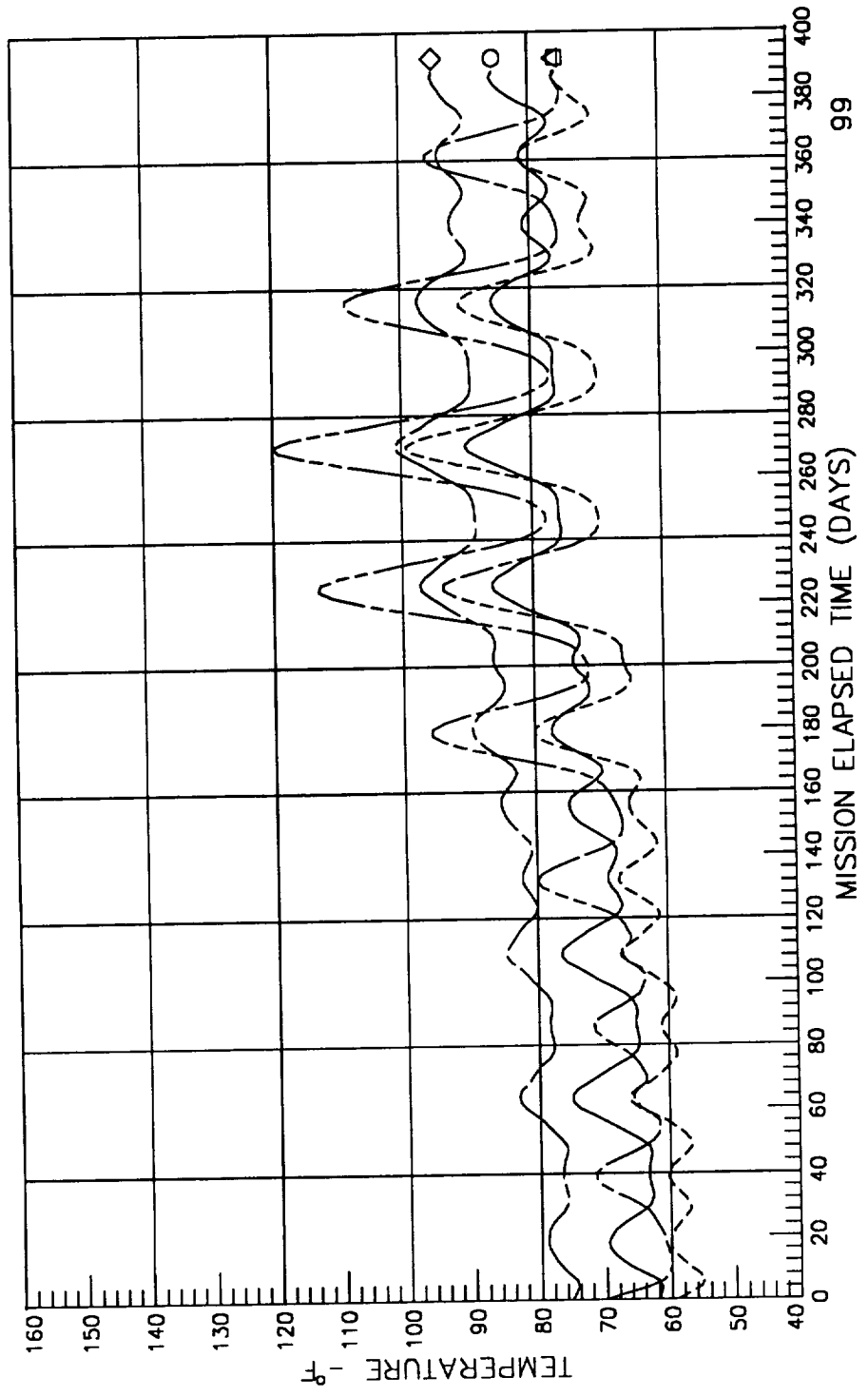
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC A4

○ 166 LONGERON 3-4  
 □ 167 LONGERON 4-5  
 ◇ 178 END LONGRN 3-4  
 △ 179 END LONGRN 4-5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



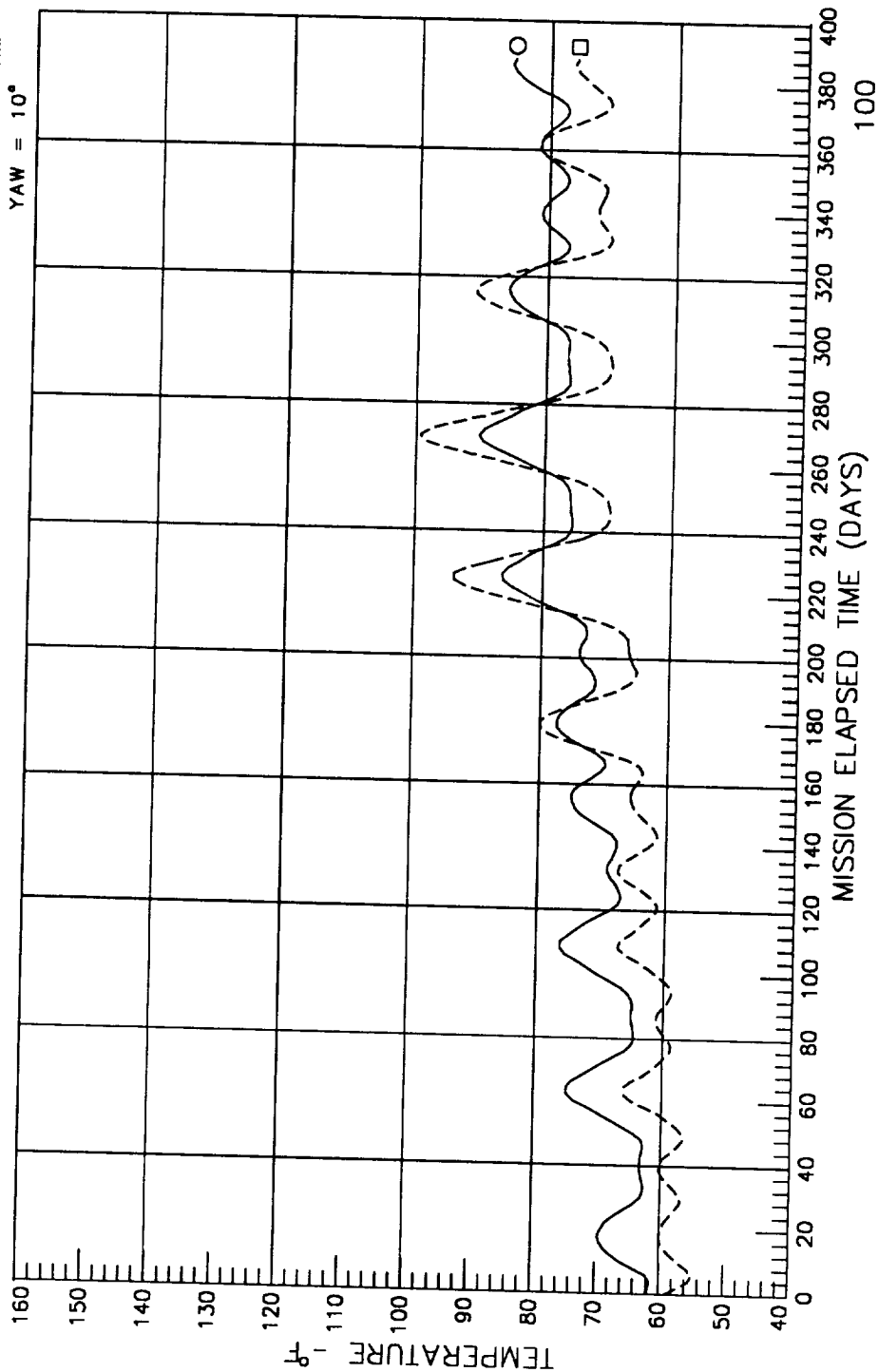
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC B4 & C4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 166 LONGERON 3-4  
 □ 167 LONGERON 4-5



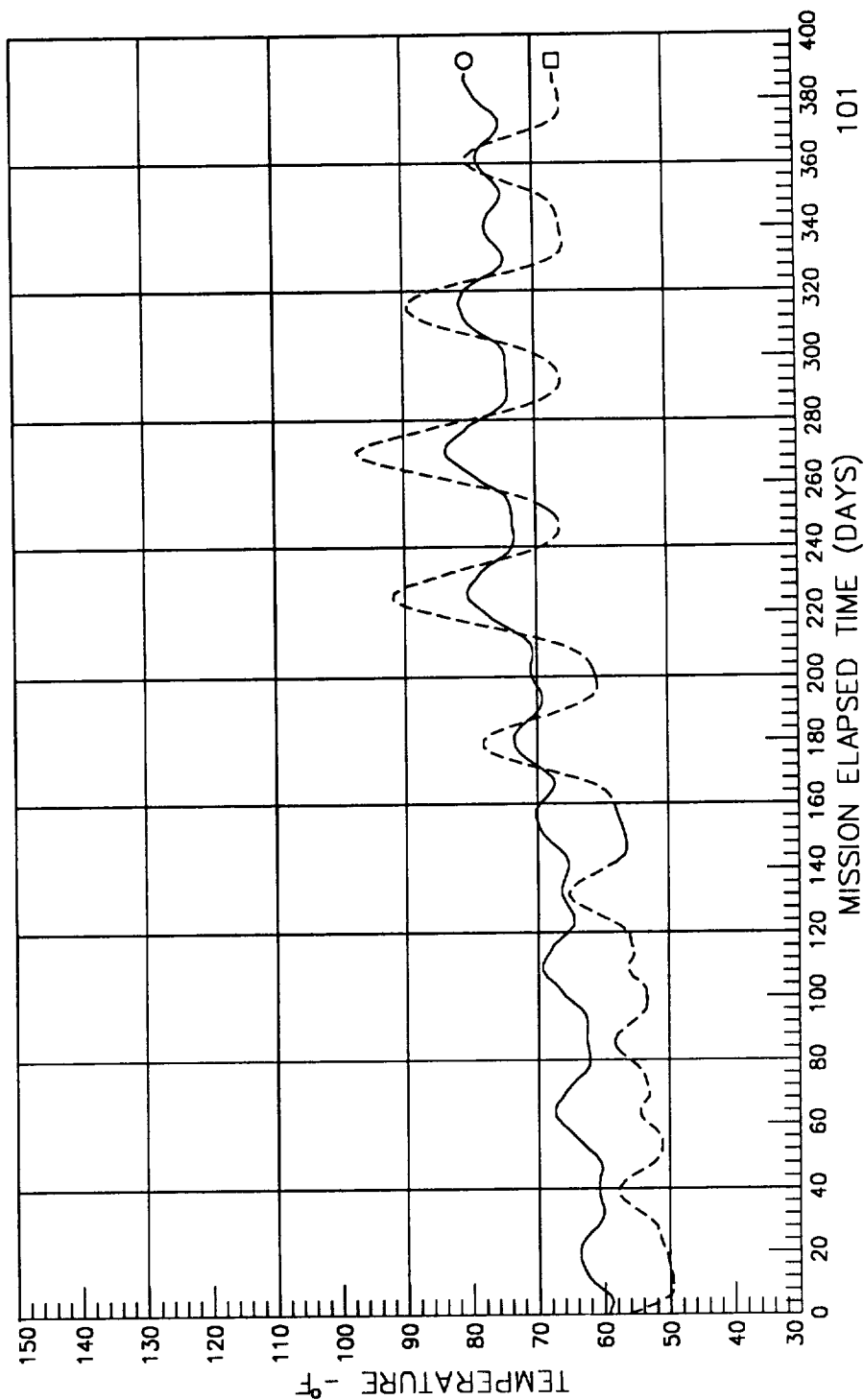
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC D4 & E4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 243 LONGERON 3-4  
 □ - - - 244 LONGERON 4-5



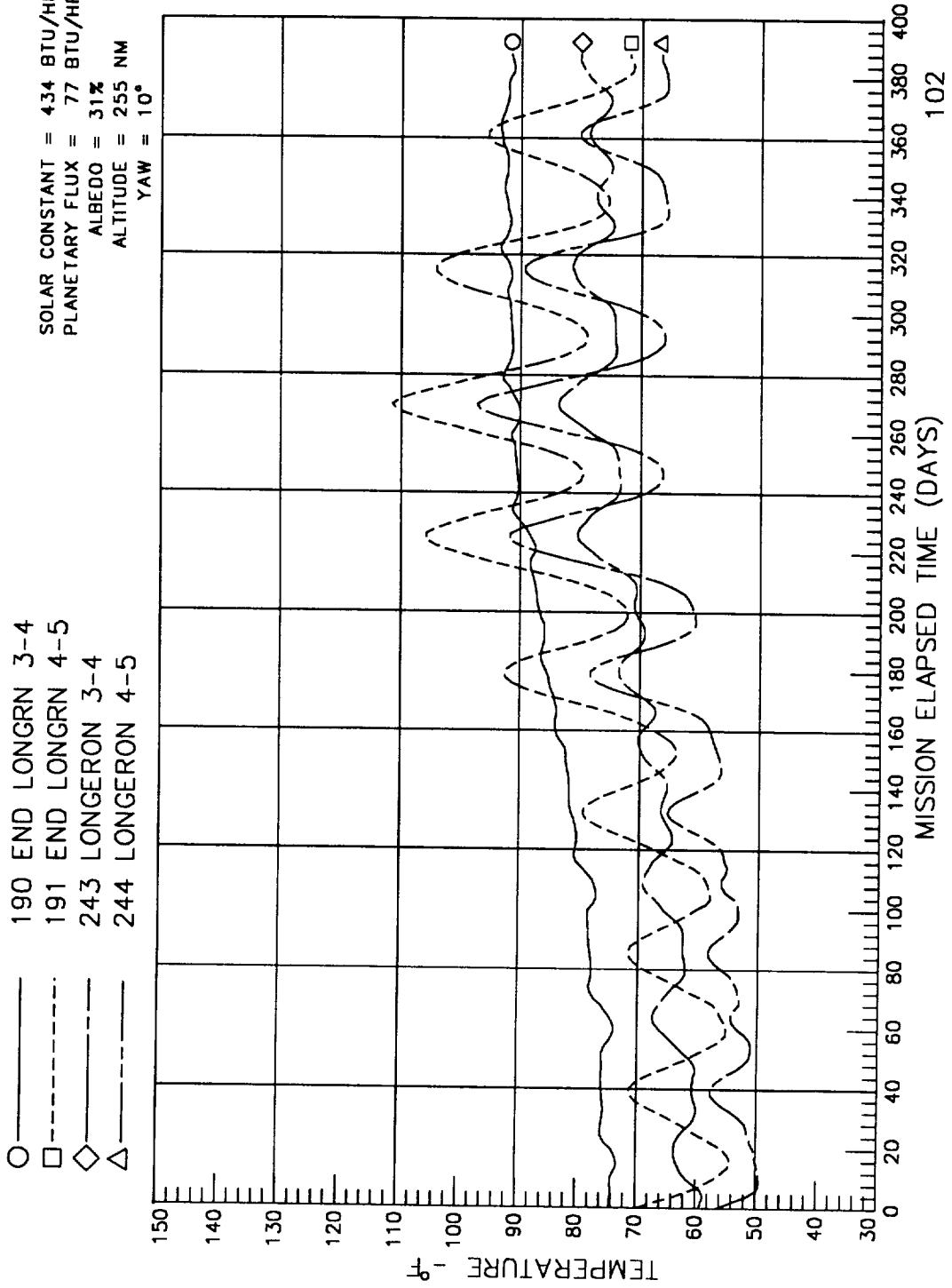
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F4

- 190 END LONGRN 3-4
- 191 END LONGRN 4-5
- 243 LONGERON 3-4
- 244 LONGERON 4-5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



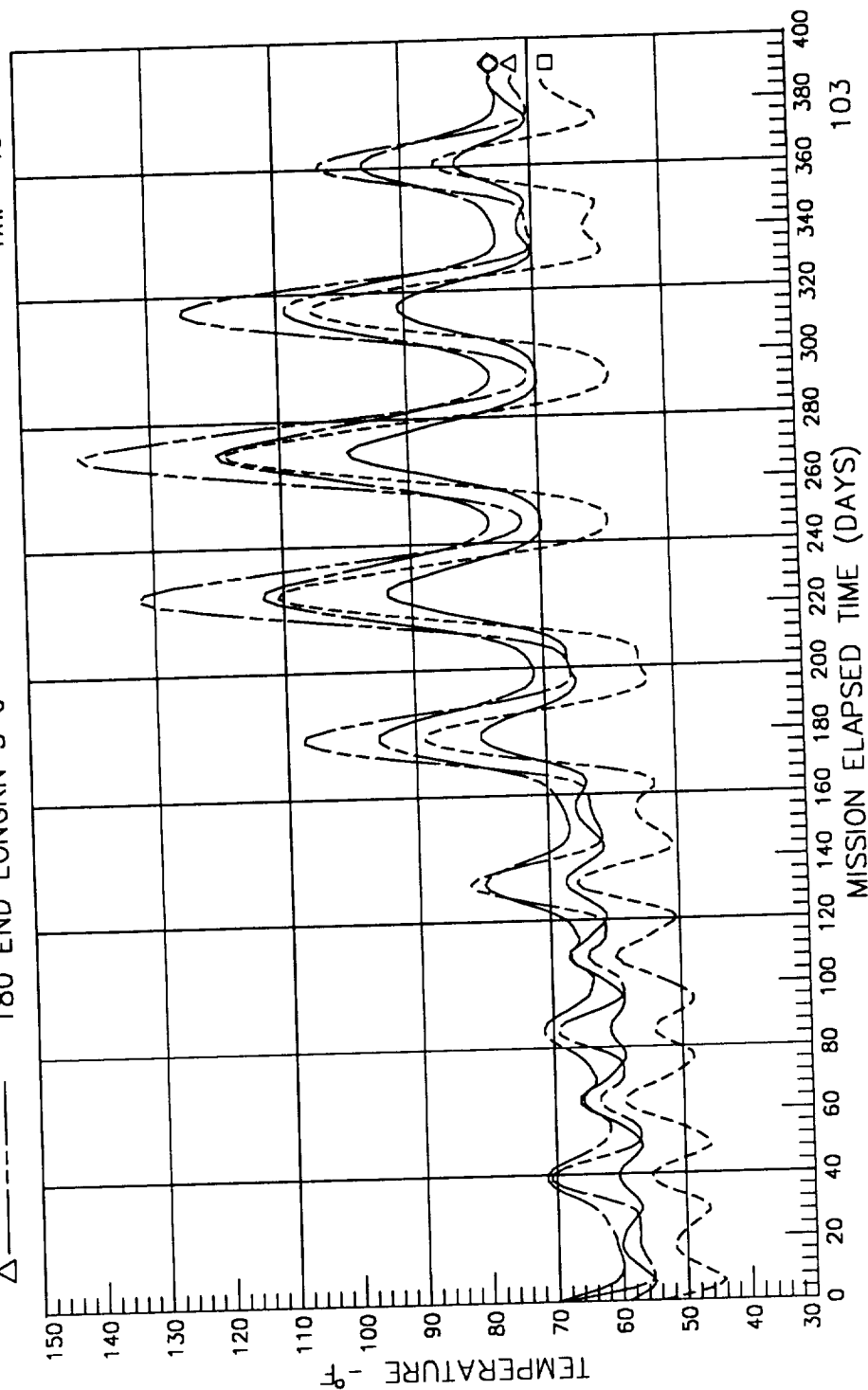
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC A5

○ 167 LONGERON 4-5  
 □ 168 LONGERON 5-6  
 ◇ 179 END LONGRN 4-5  
 △ 180 END LONGRN 5-6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

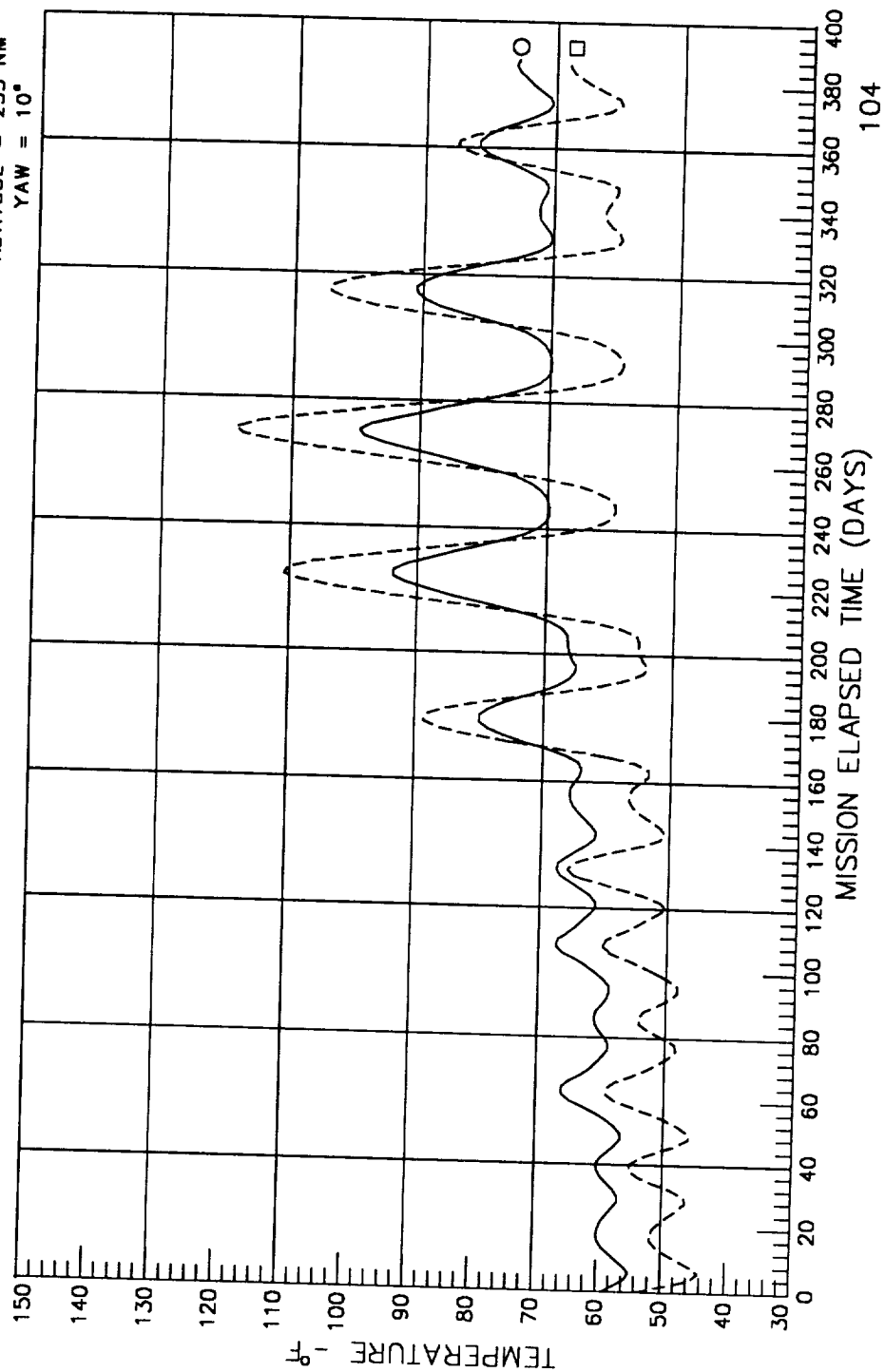
DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC B5 & C5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

167 LONGERON 4-5  
 168 LONGERON 5-6

○ ———  
 □ - - - -





# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC D5 & E5

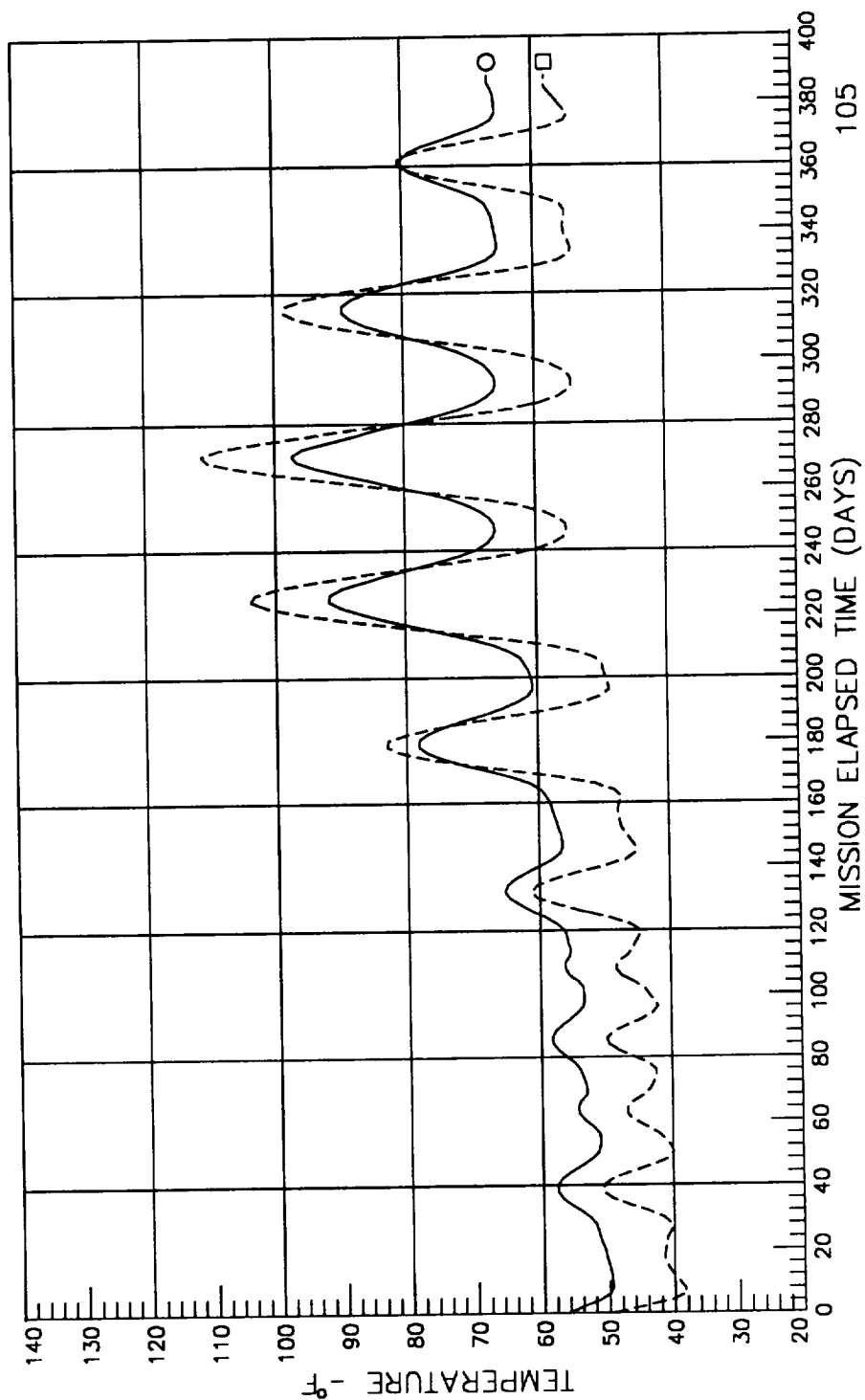
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>

ALBEDO = 31%

ALTITUDE = 255 NM

YAW = 10°

○ 244 LONGERON 4-5  
□ 245 LONGERON 5-6



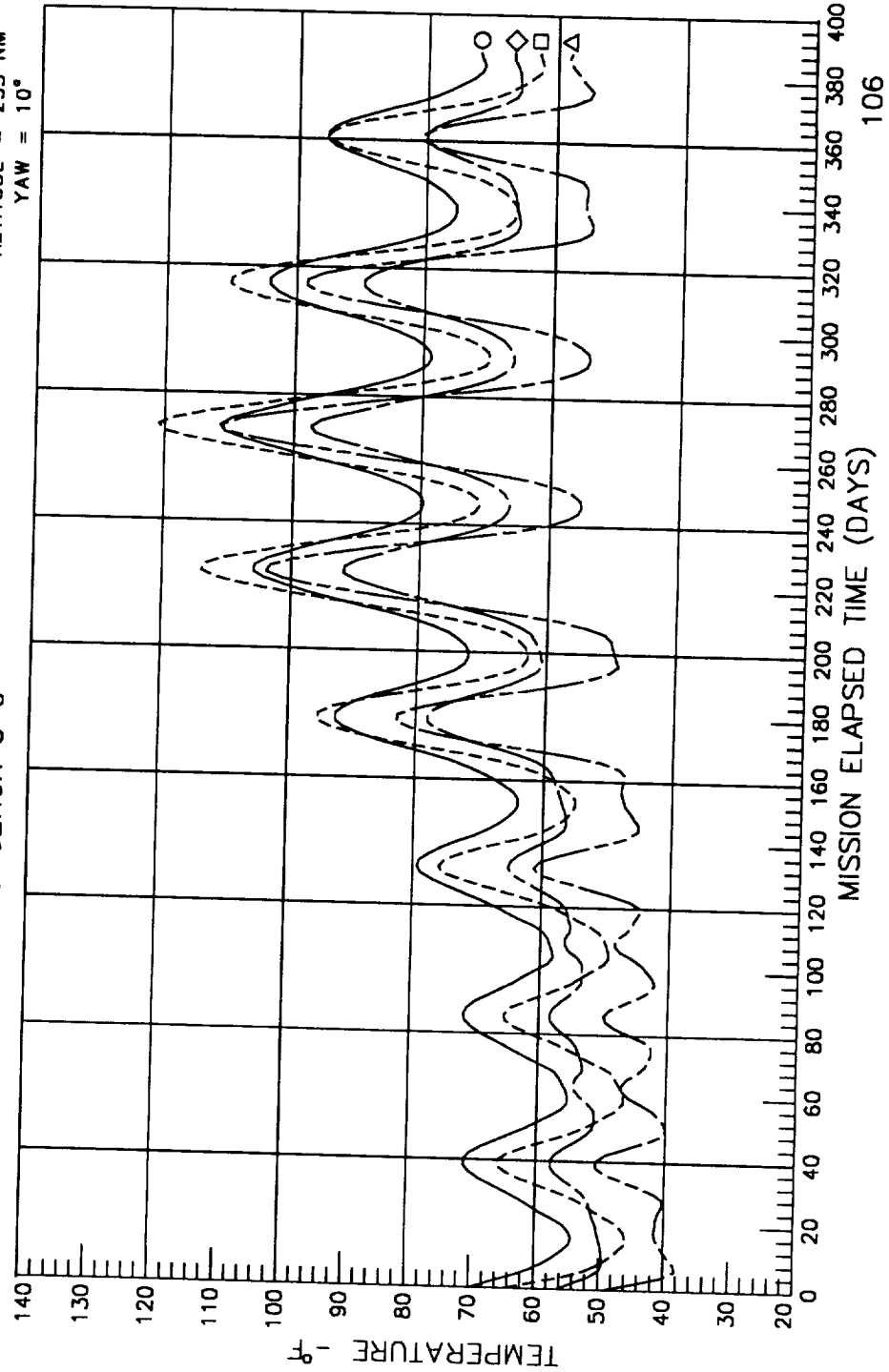
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC F5

- 191 END LONGRN 4-5
- 192 END LONGRN 5-6
- ◇ 244 LONGERON 4-5
- △ 245 LONGERON 5-6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



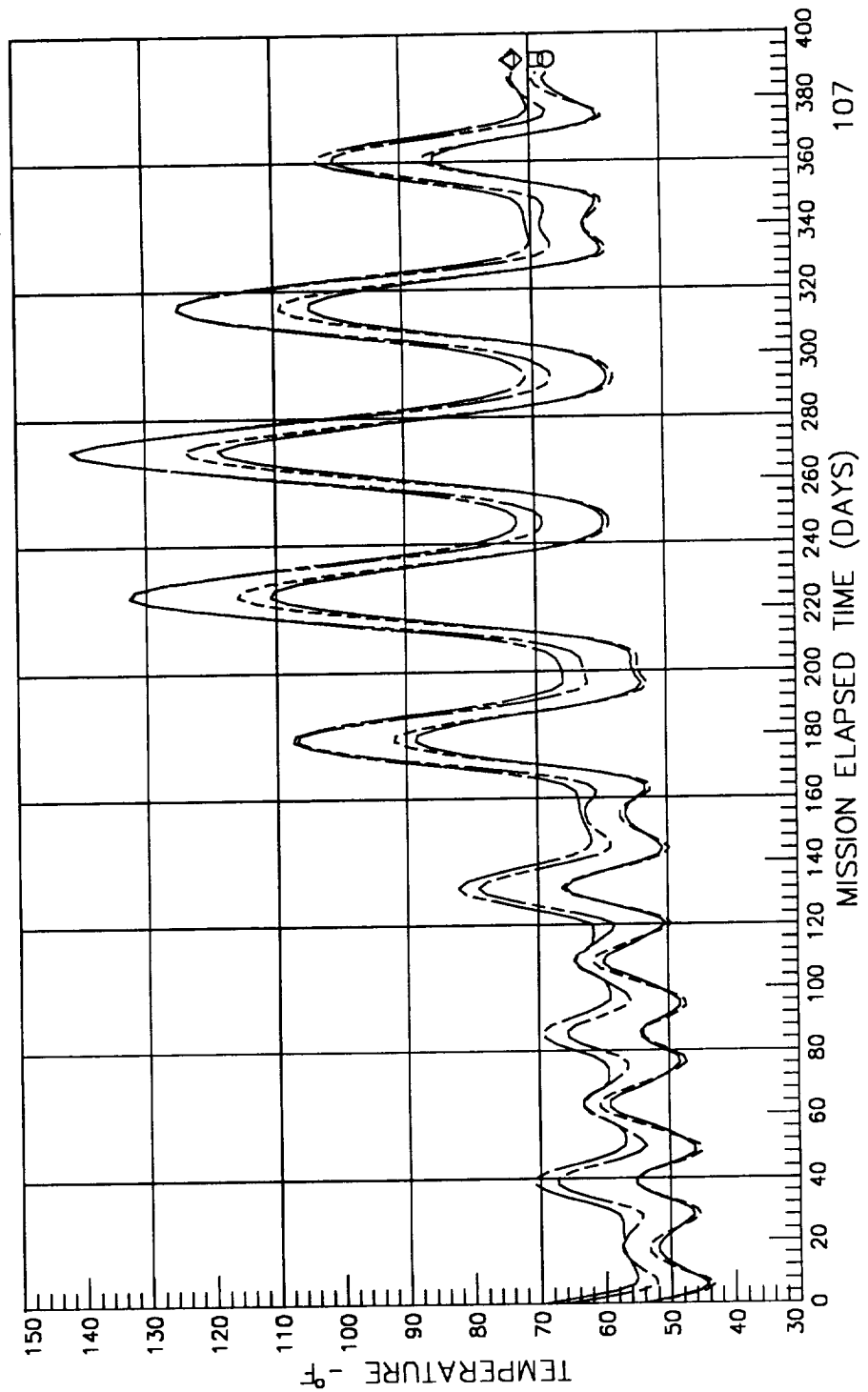
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A6

- ——— 168 LONGERON 5-6
- - - - 169 LONGERON 6-7
- ◇ ——— 180 END LONGRN 5-6
- △ ——— 181 END LONGRN 6-7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



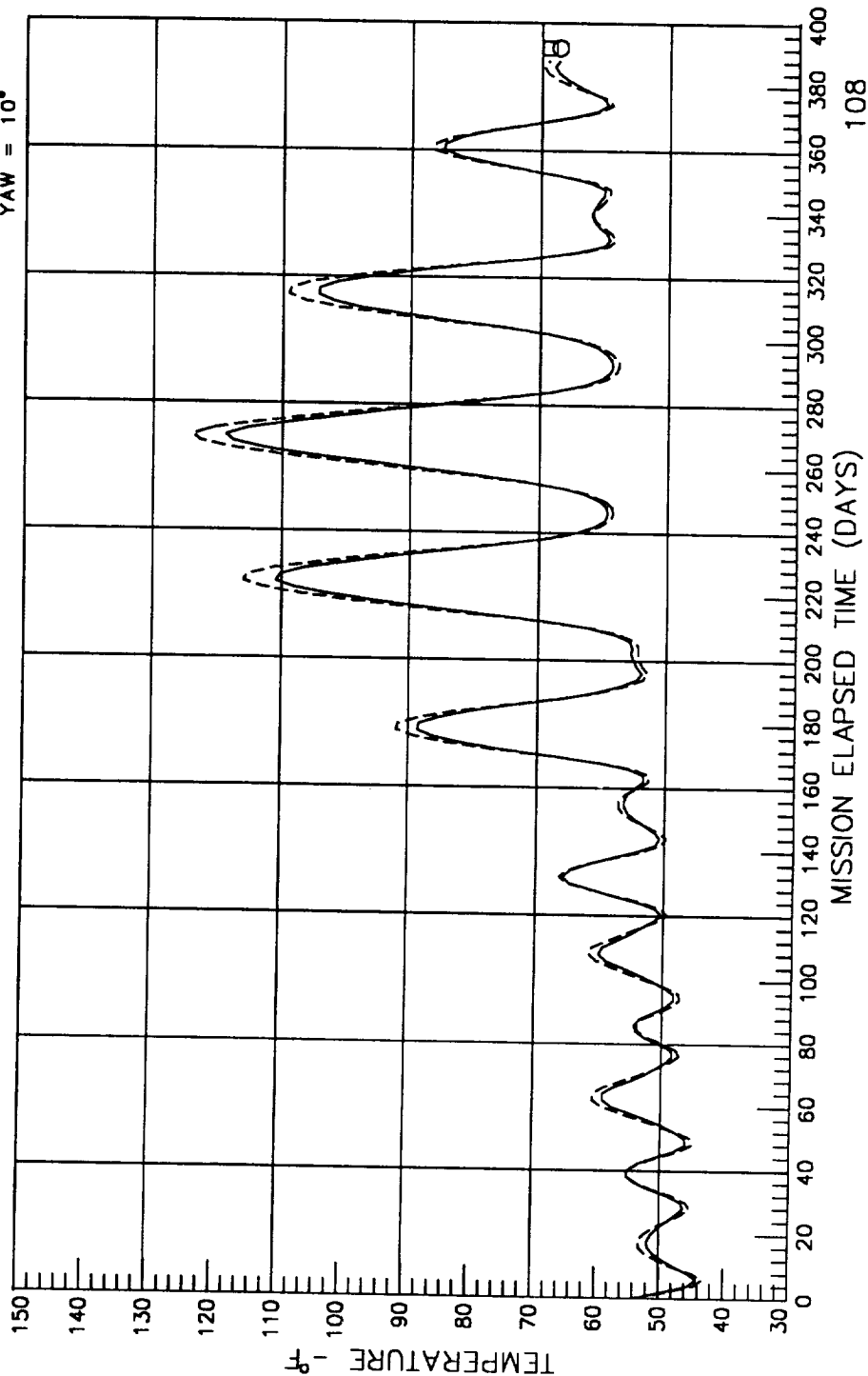
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC B6 & C6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 168 LONGERON 5-6  
 □ - - - 169 LONGERON 6-7



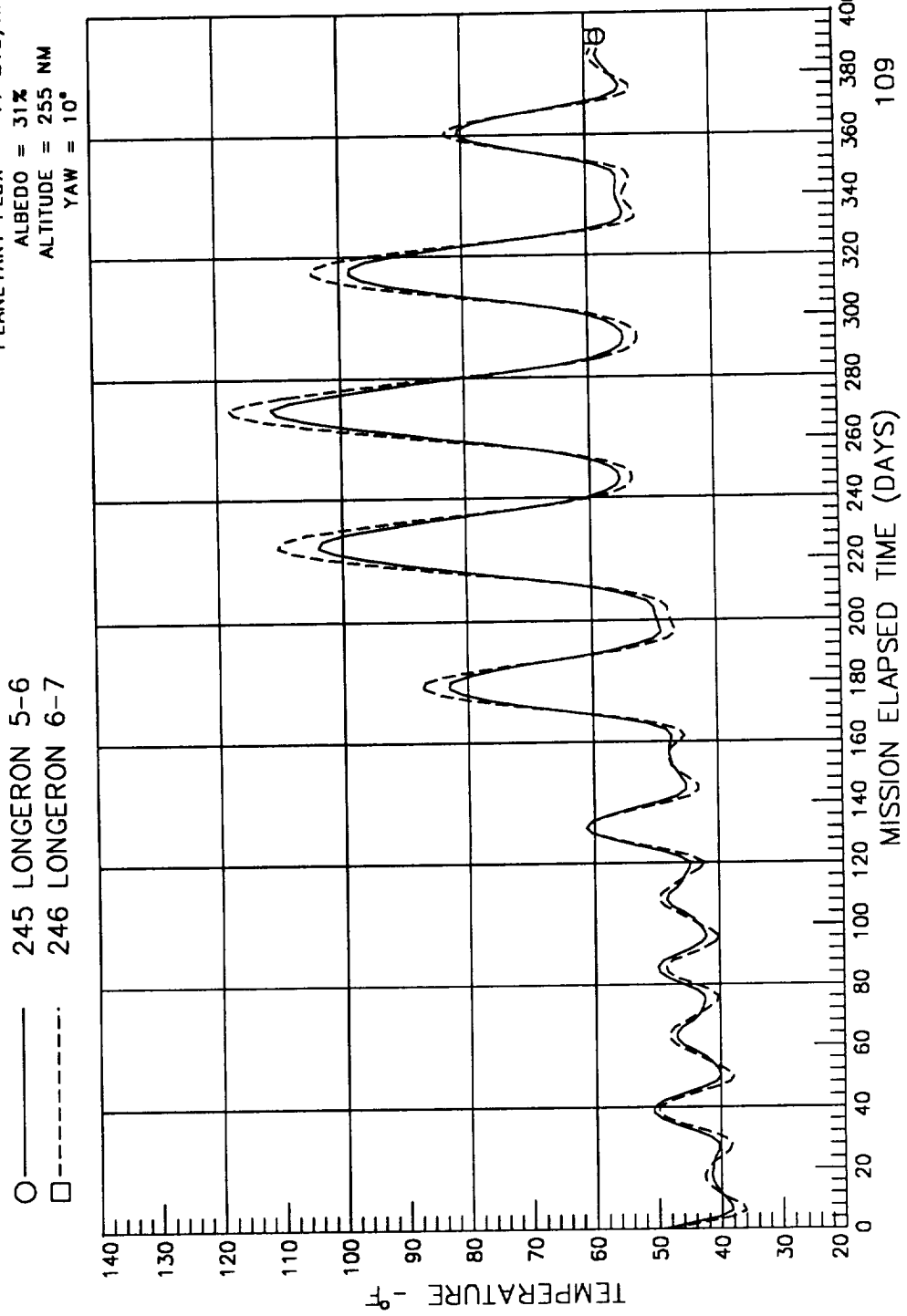
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC D6 & E6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 245 LONGERON 5-6  
 □ 246 LONGERON 6-7



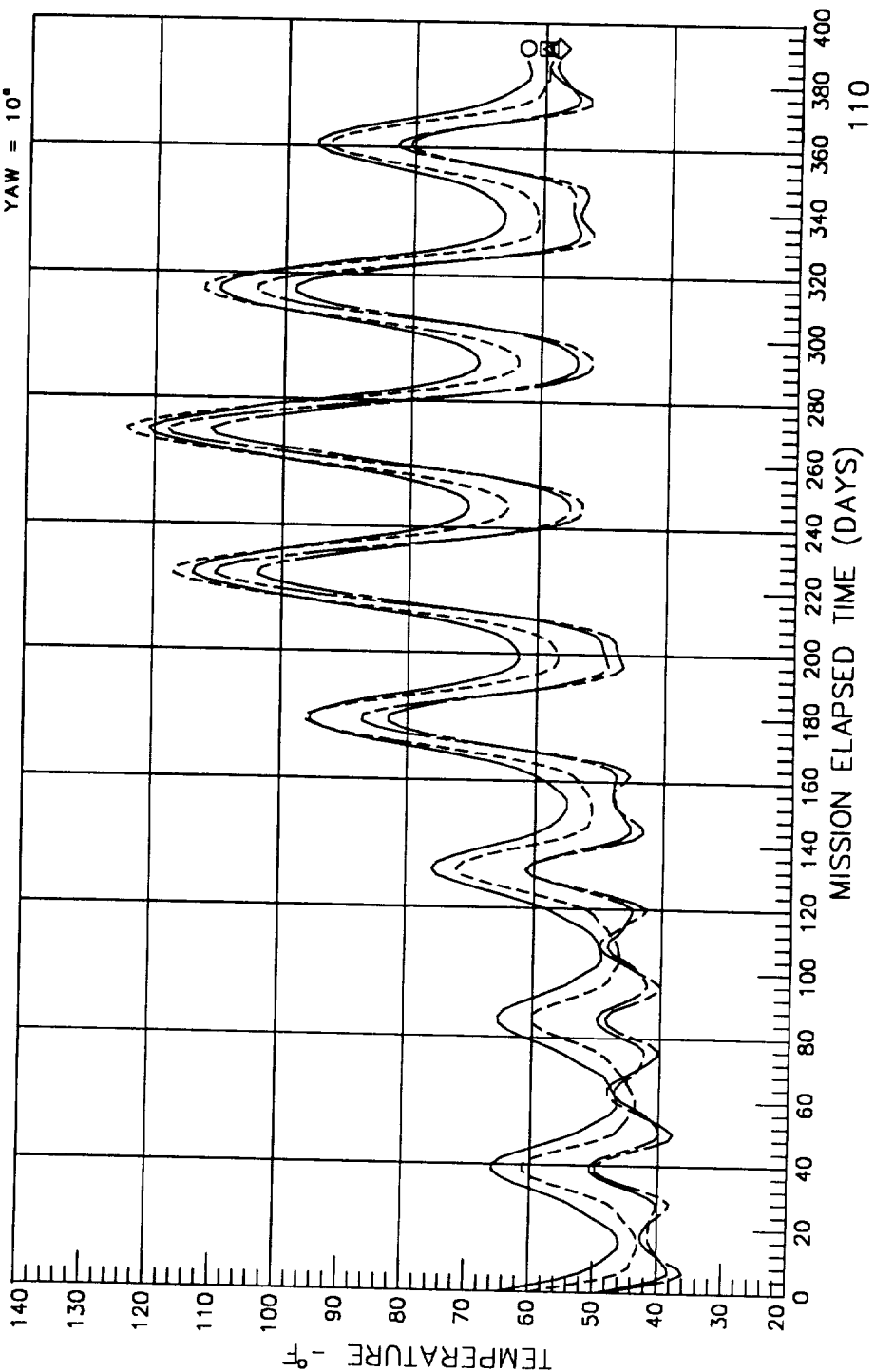
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F6

- — 192 END LONGRN 5-6
- - - 193 END LONGRN 6-7
- ◇ — 245 LONGERON 5-6
- △ - - 246 LONGERON 6-7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



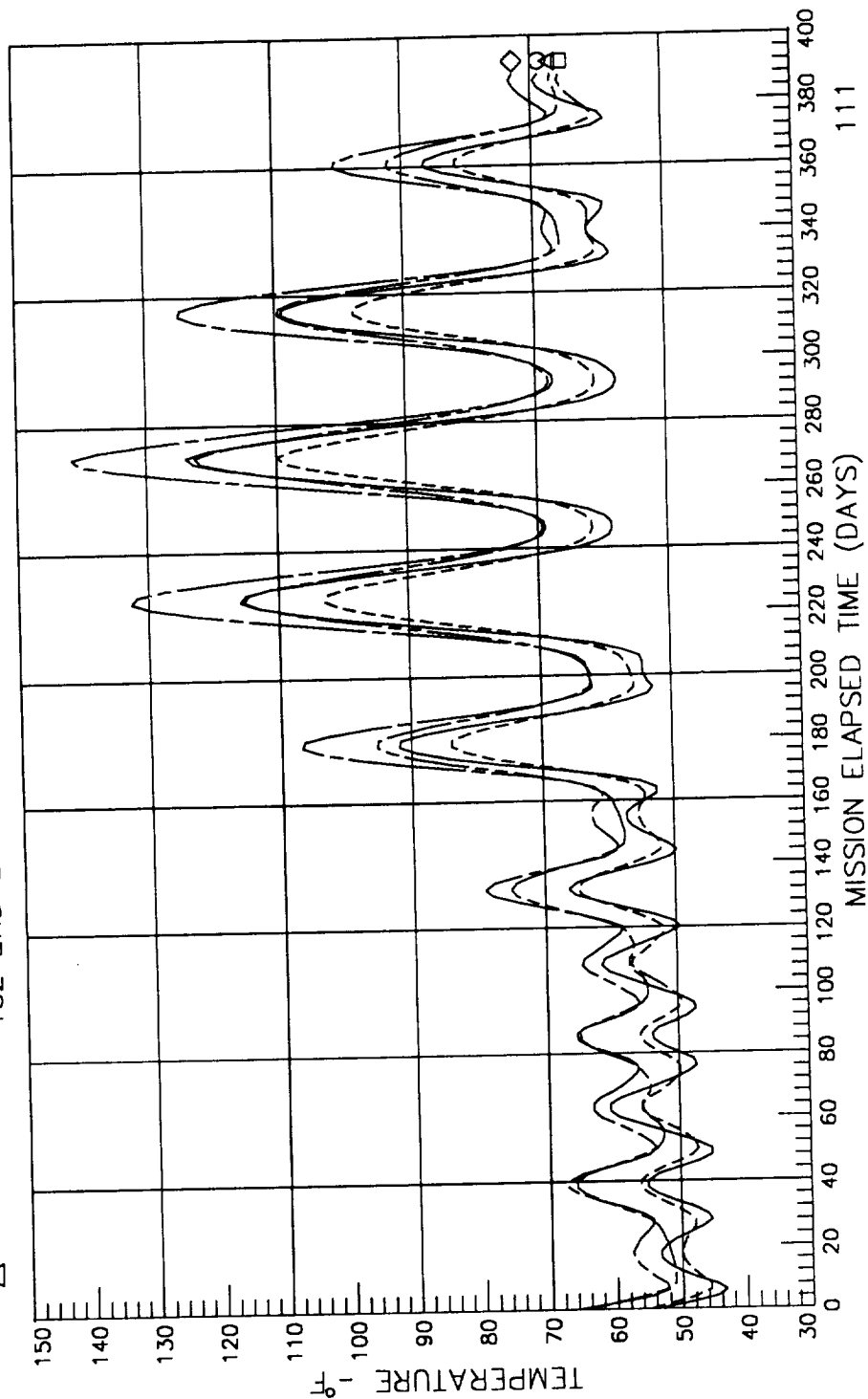
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A7

○ 169 LONGERON 6-7  
 □ 170 LONGERON 7-8  
 ◇ 181 END LONGRN 6-7  
 △ 182 END LONGRN 7-8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



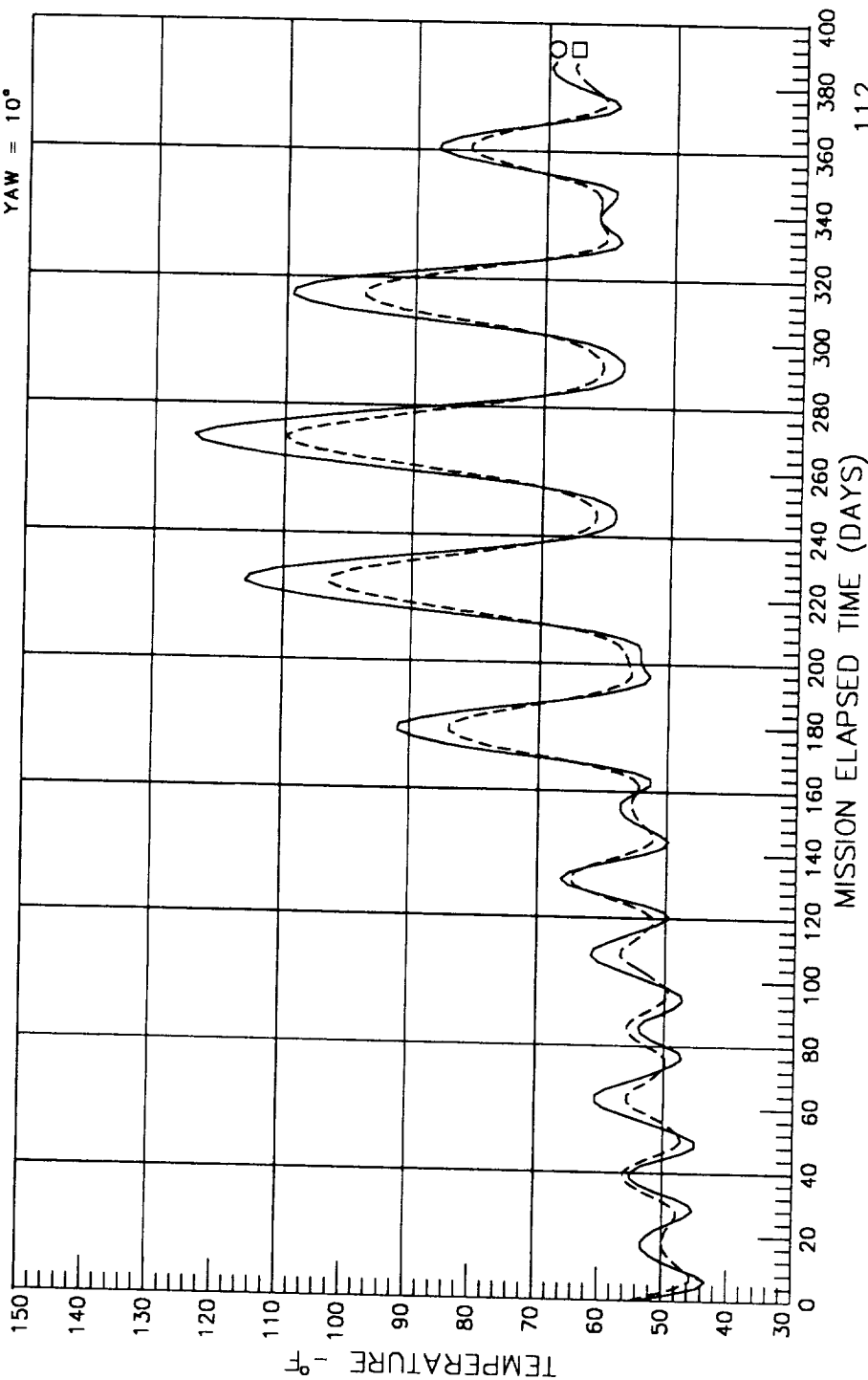
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC B7 & C7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 169 LONGERON 6-7  
 □ - - - 170 LONGERON 7-8





# LONG DURATION EXPOSURE FACILITY

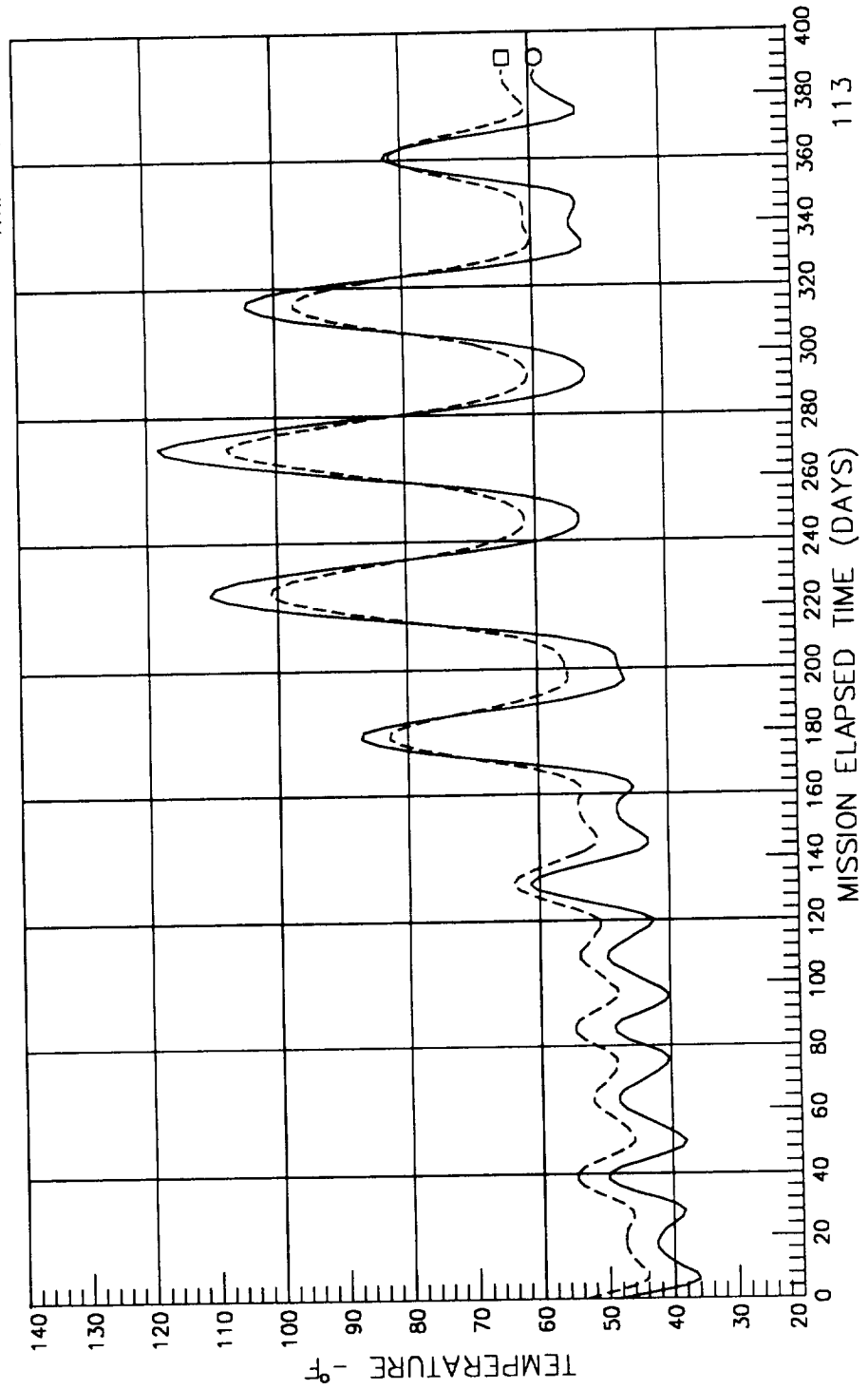
## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC D7 & E7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

246 LONGERON 6-7  
 247 LONGERON 7-8

○ ———  
 □ - - - -



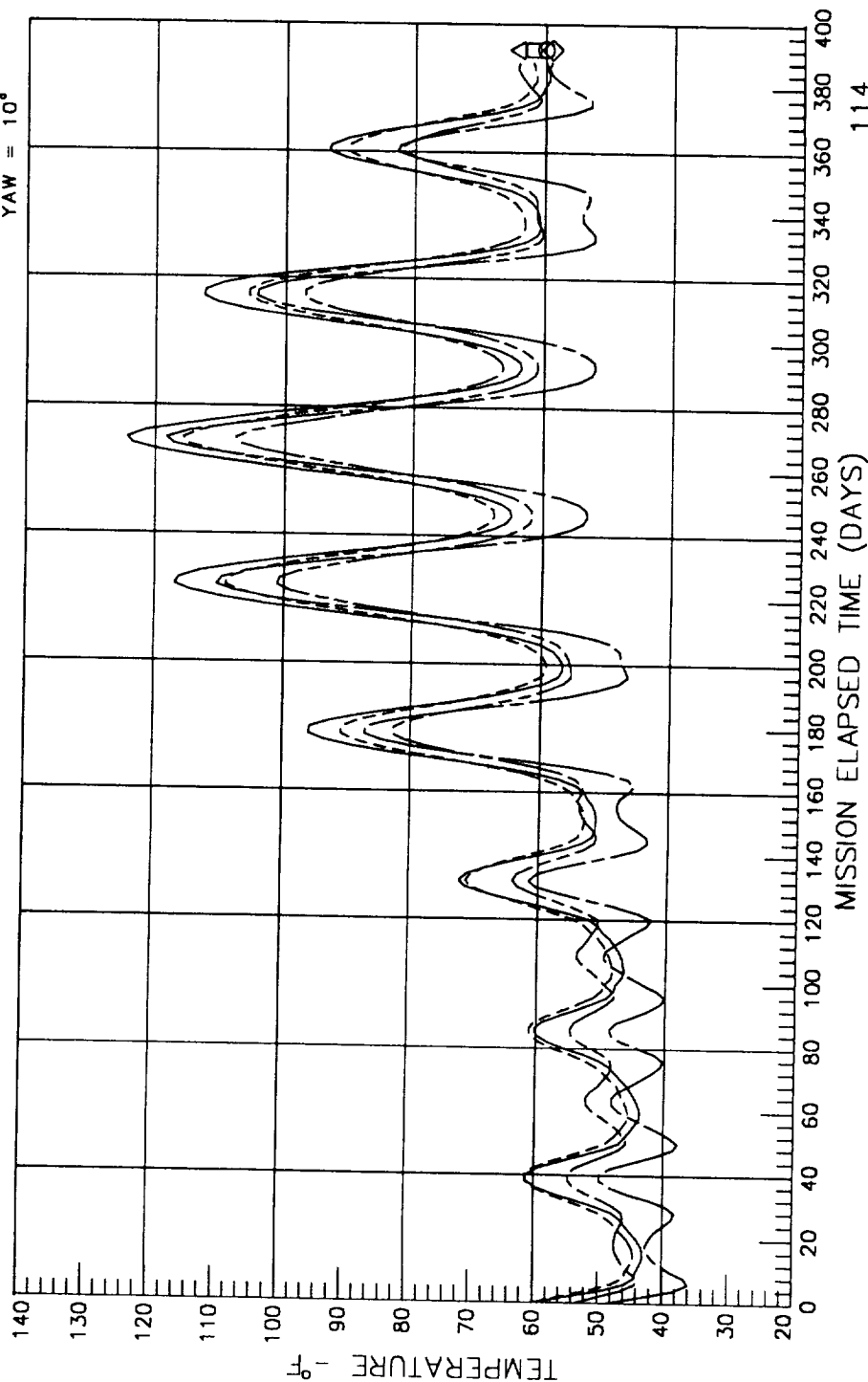
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F7

- ——— 193 END LONGRN 6-7
- - - - - 194 END LONGRN 7-8
- ◇ - - - - 246 LONGERON 6-7
- △ - - - - 247 LONGERON 7-8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



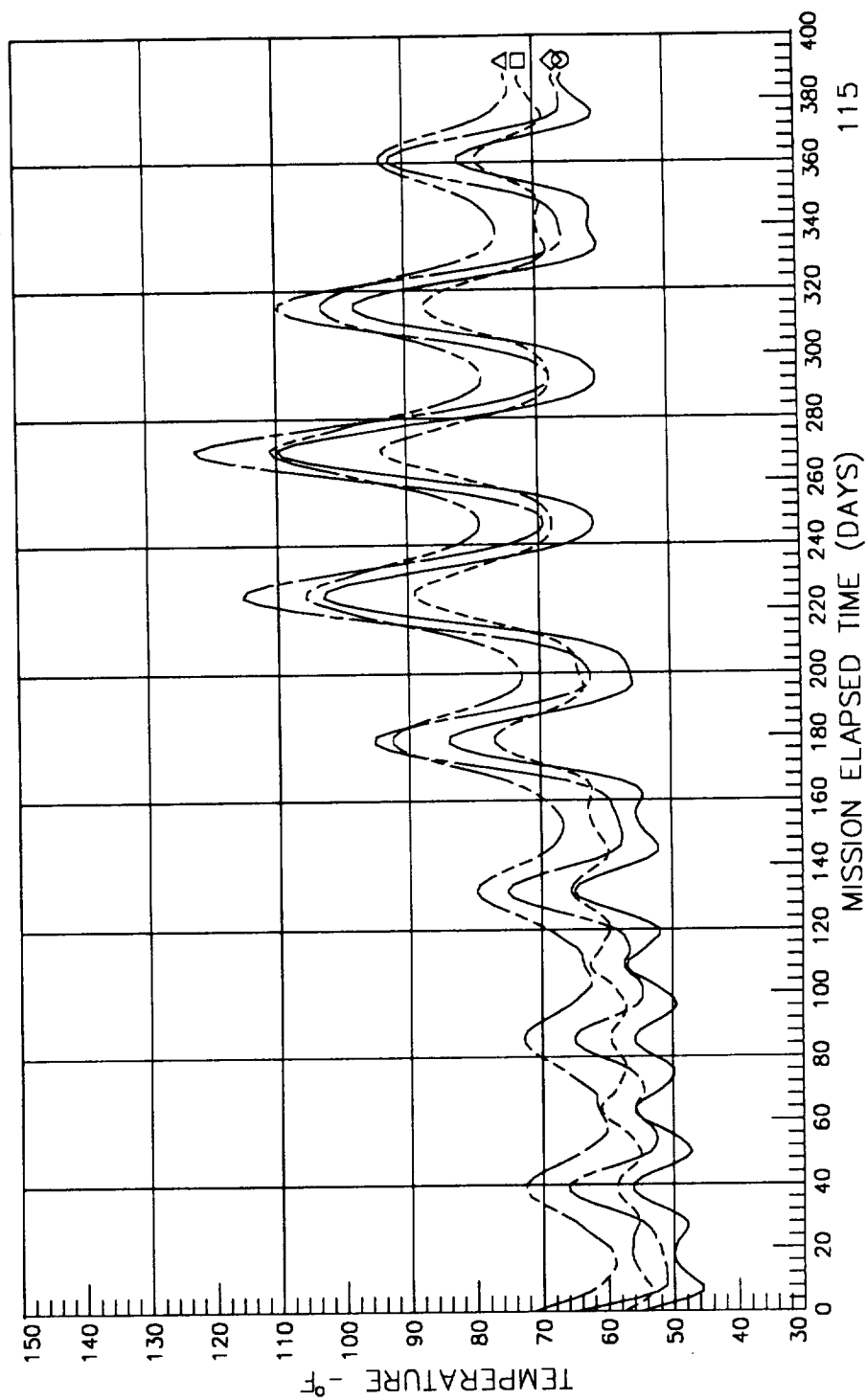
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A8

○ — 170 LONGERON 7-8  
 □ - - 171 LONGERON 8-9  
 ◇ — 182 END LONGRN 7-8  
 △ — 183 END LONGRN 8-9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



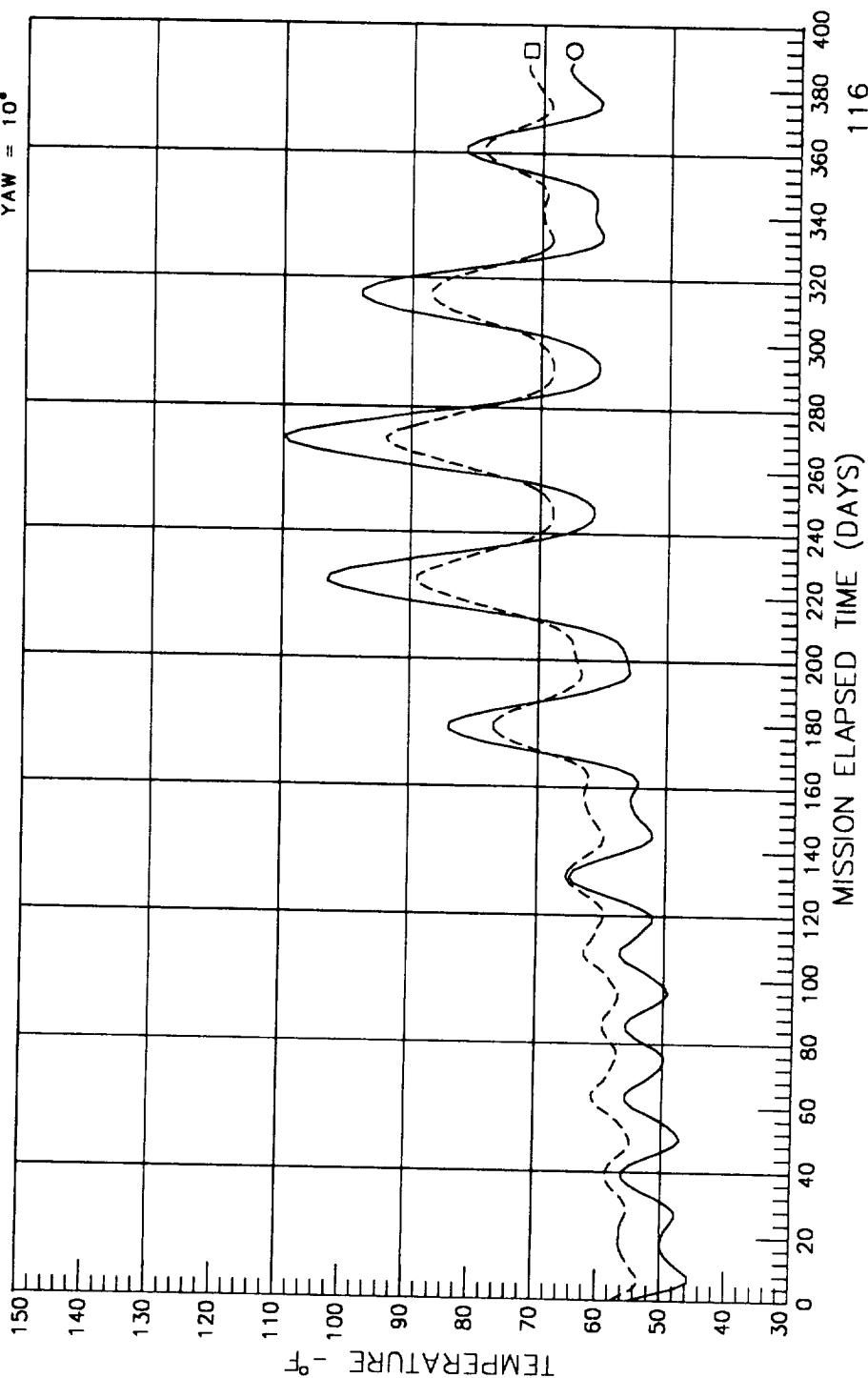
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC B8 & C8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

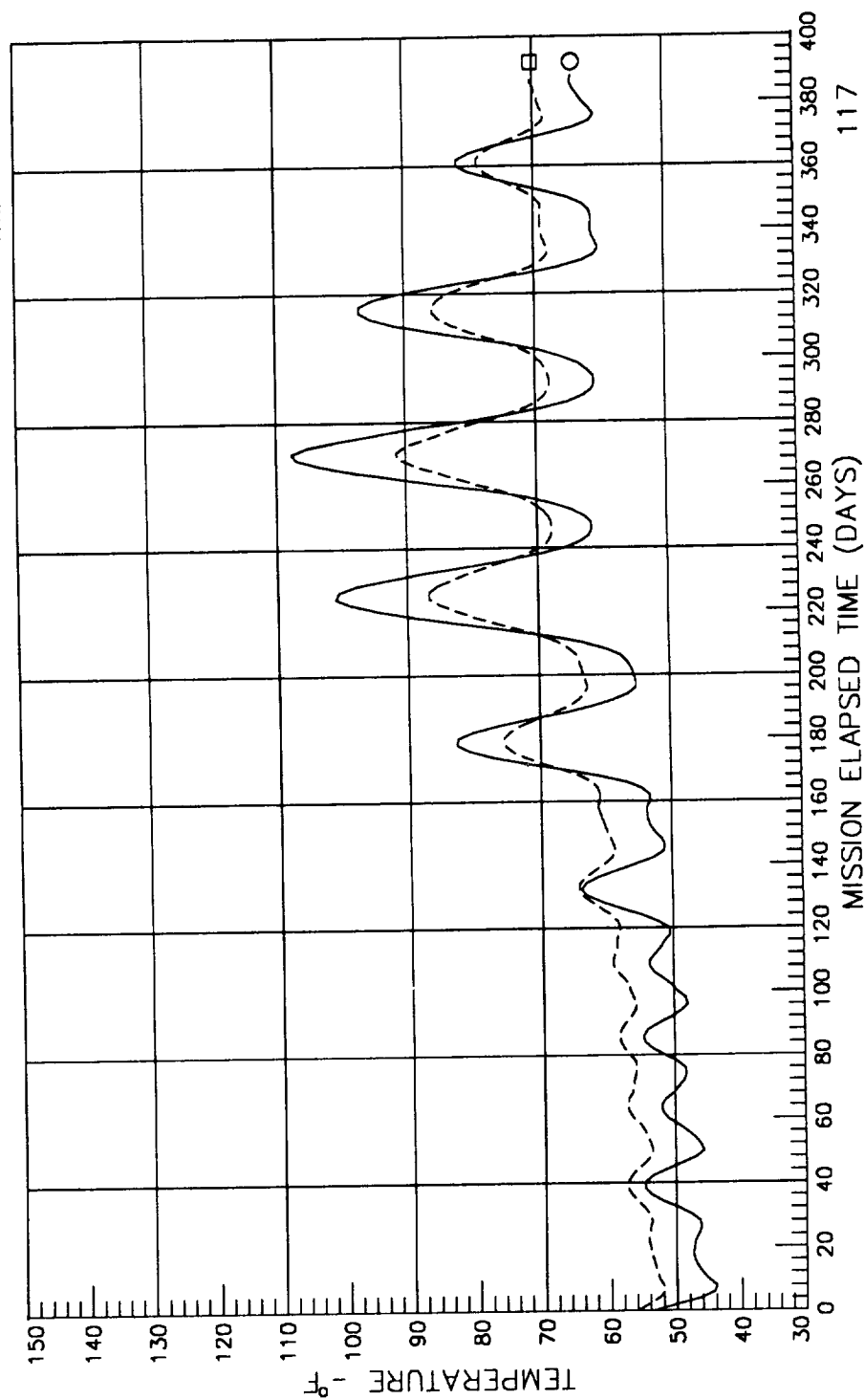
○ 170 LONGERON 7-8  
 □ 171 LONGERON 8-9



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85 STRUCTURE: LOC D8 & E8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 247 LONGERON 7-8  
 □ - - - 248 LONGERON 8-9



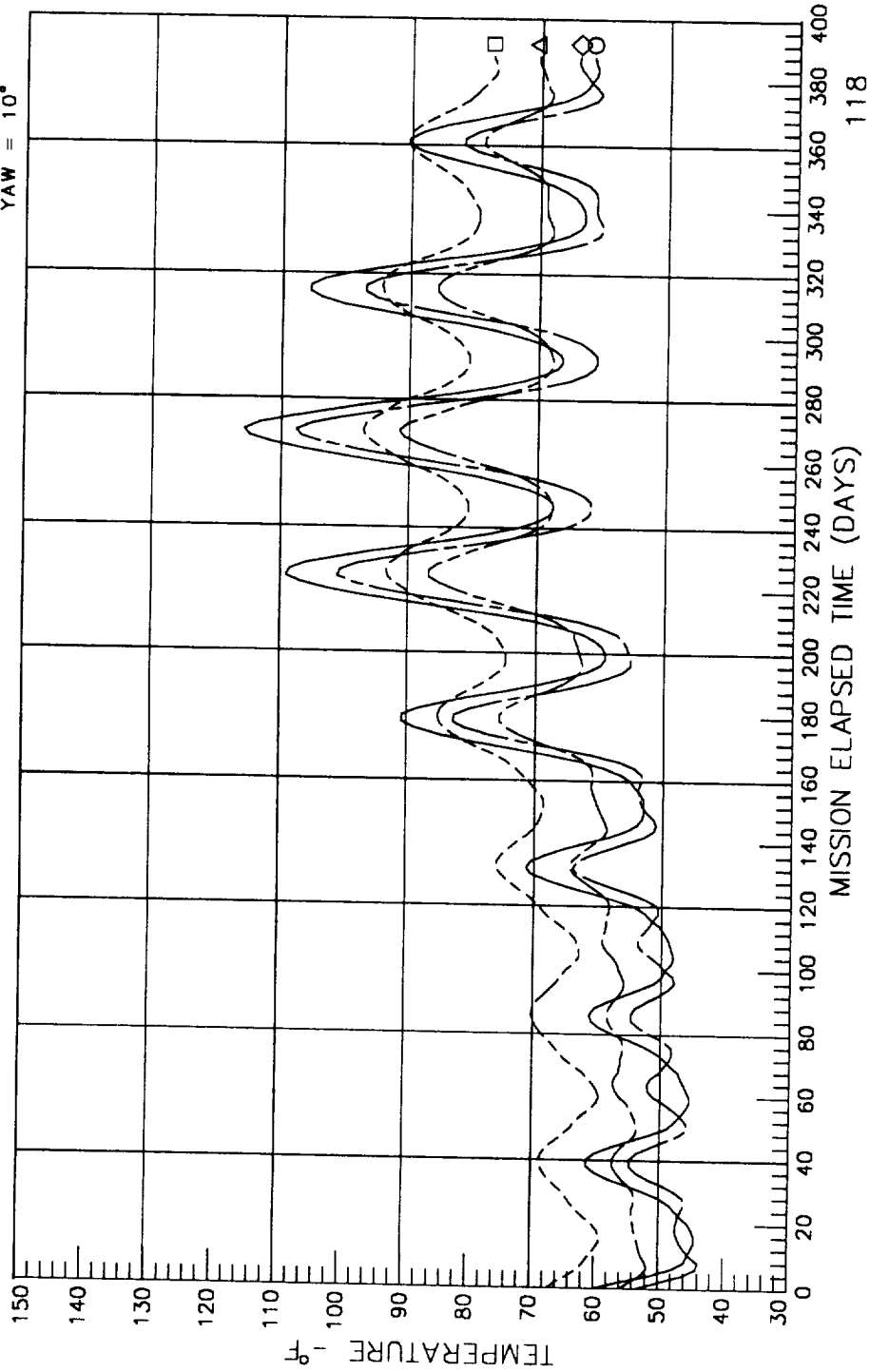
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F8

- — 194 LONGERON 7-8
- - - 195 LONGERON 8-9
- ◇ - - 247 END LONGRN 7-8
- △ - - 248 END LONGRN 8-9

SOLAR CONSTANT = 4.34 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



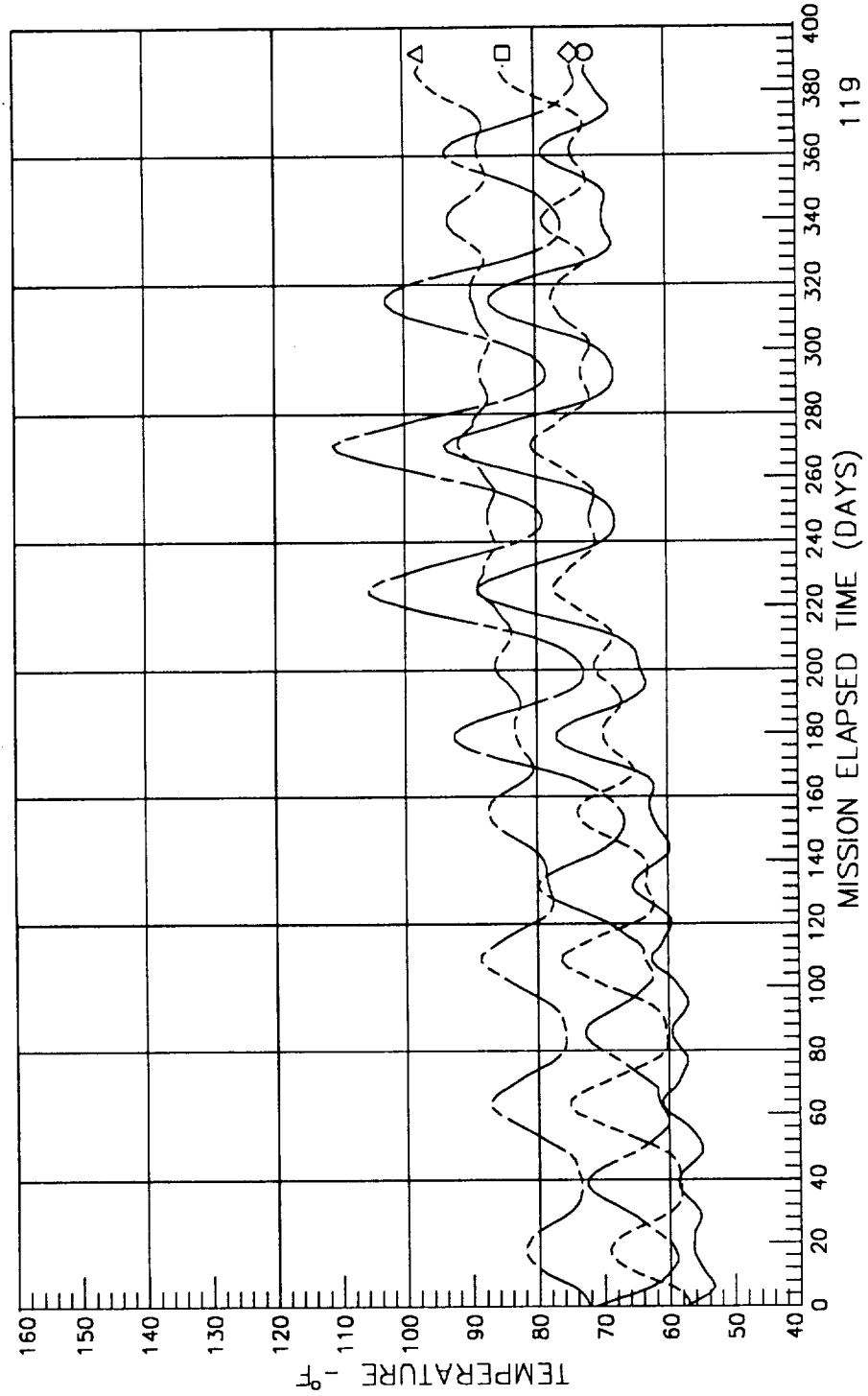
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A9

○ — 171 LONGERON 8-9  
 □ - - 172 LONGERON 9-10  
 ◇ — 183 END LONGRN 8-9  
 △ — 184 END LONGRN 9-10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

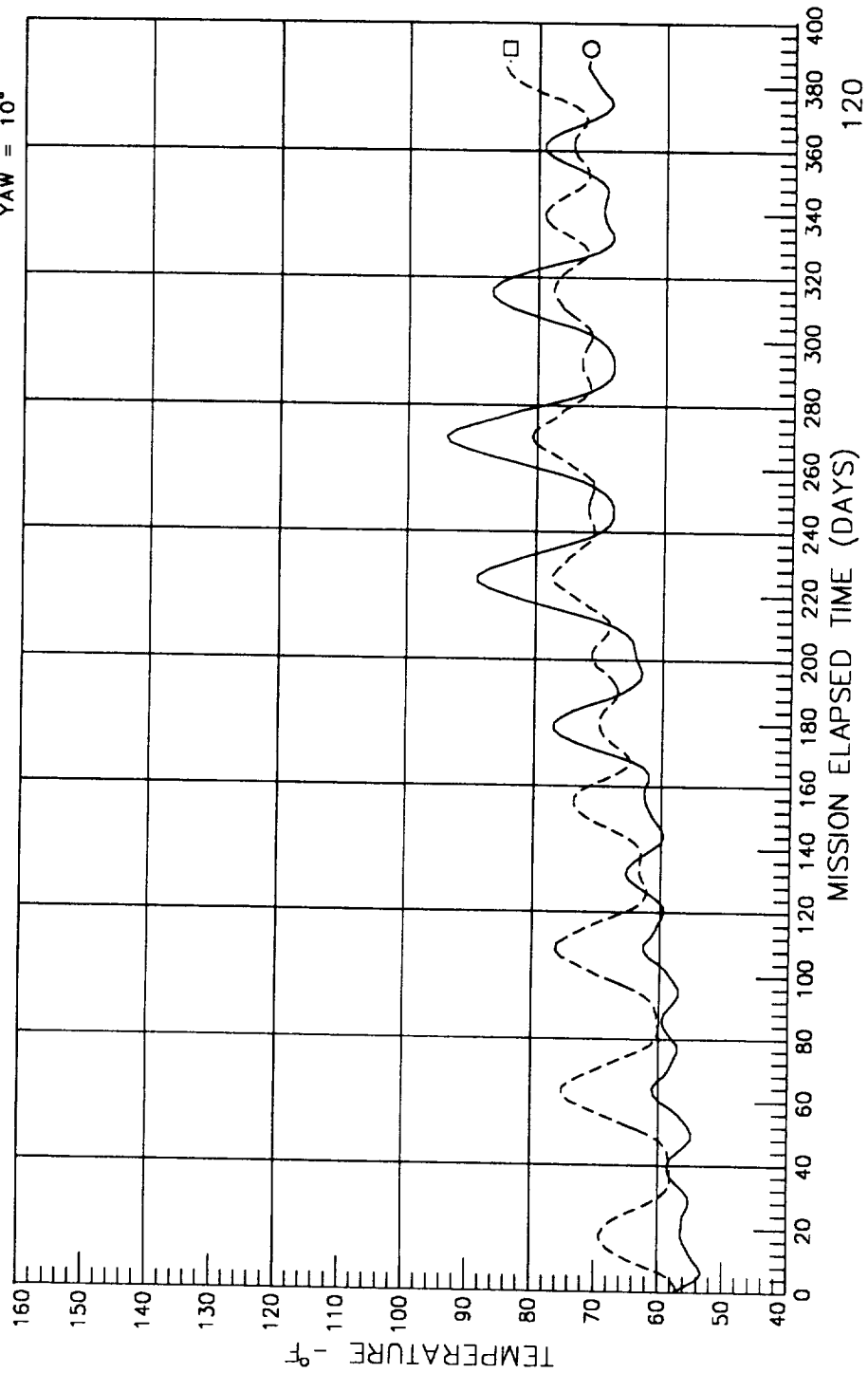


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
STRUCTURE: LOC B9 & C9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ — 171 LONGERON 8-9  
□ - - - 172 LONGERON 9-10





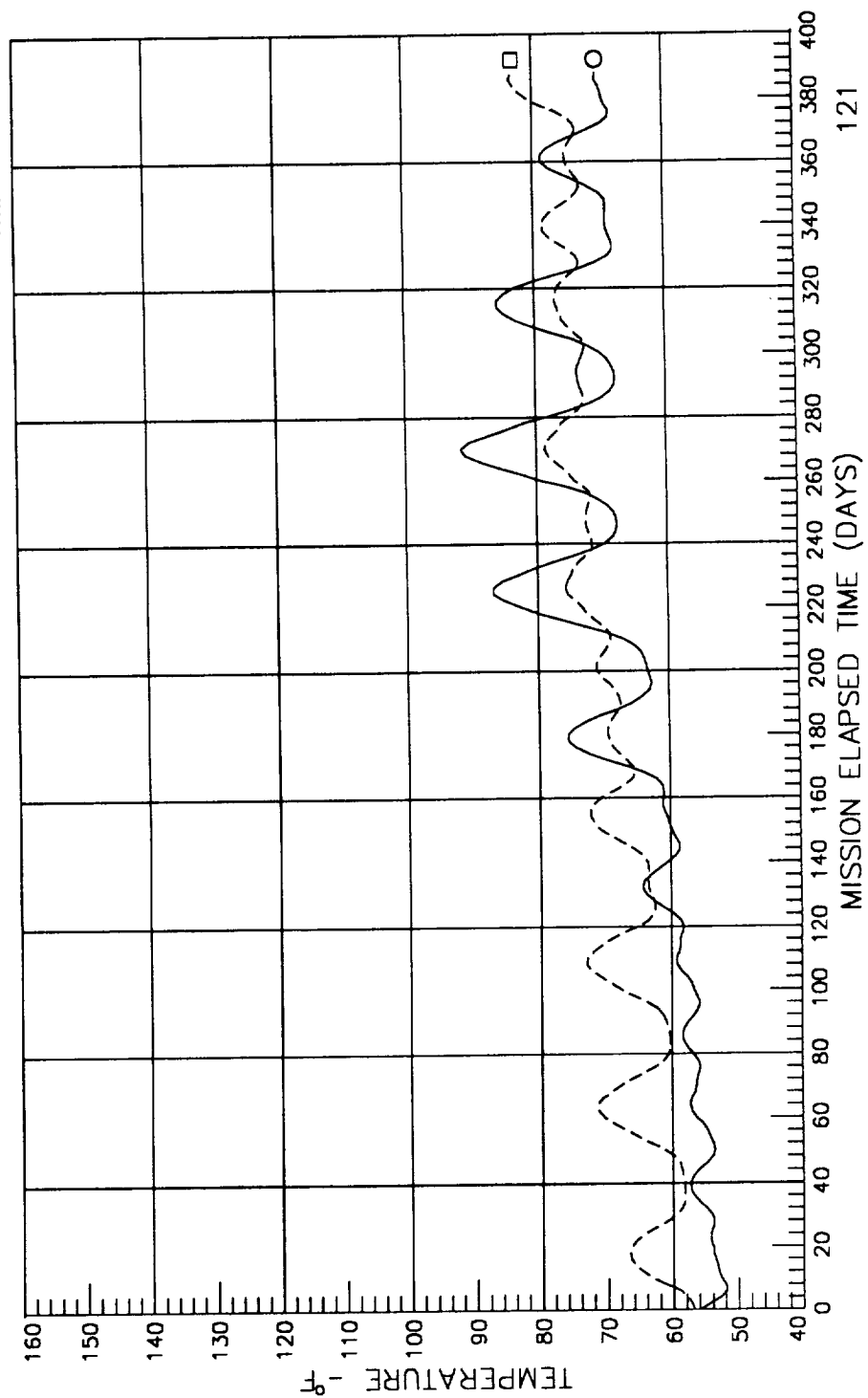
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC 09 & E9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 248 LONGERON 8-9  
 □ - - - 249 LONGERON 9-10



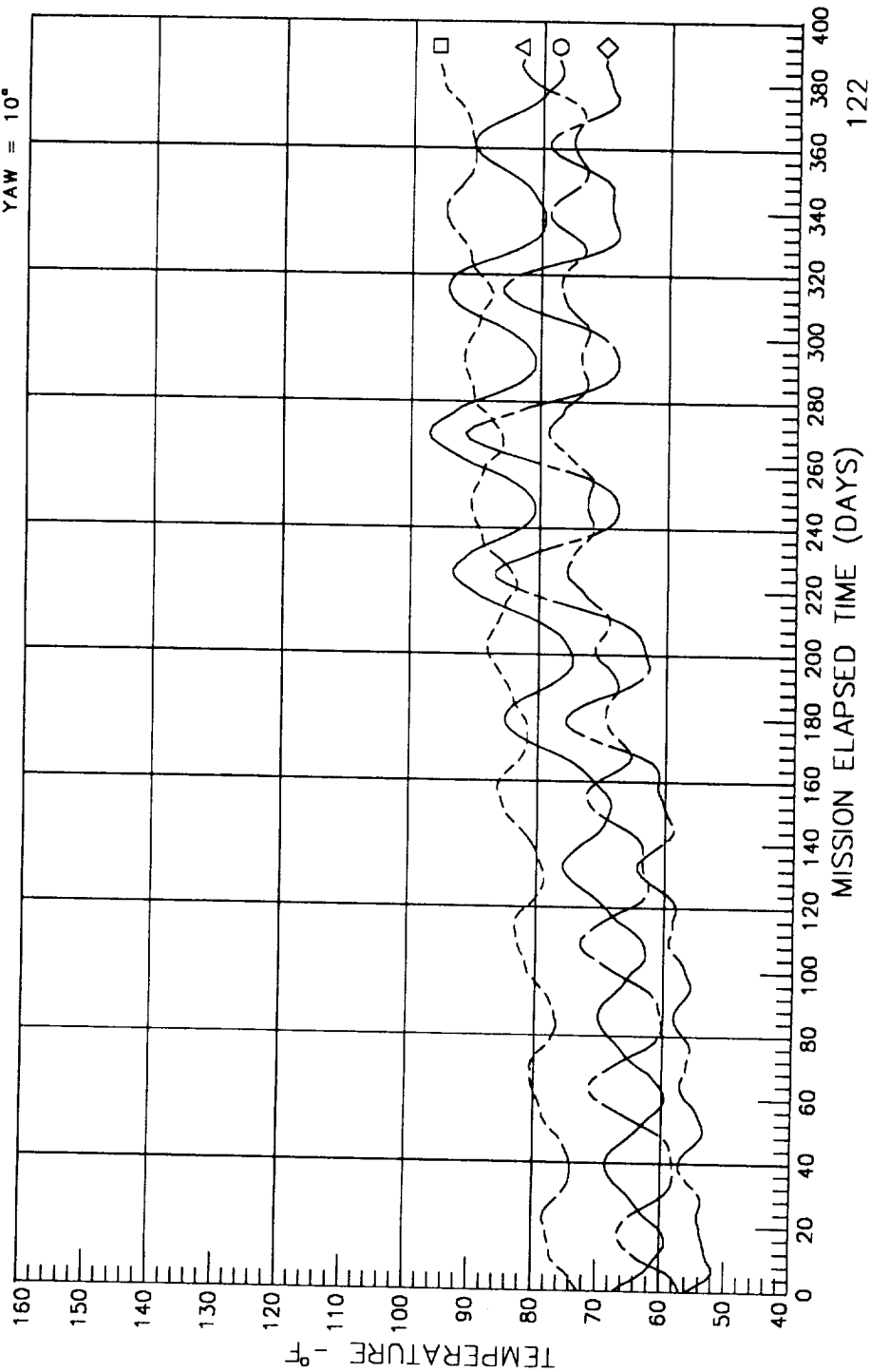
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F9

- 195 END LONGRN 8-9
- 196 END LONGRN 9-10
- ◇ 248 LONGERON 8-9
- △ 249 LONGERON 9-10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



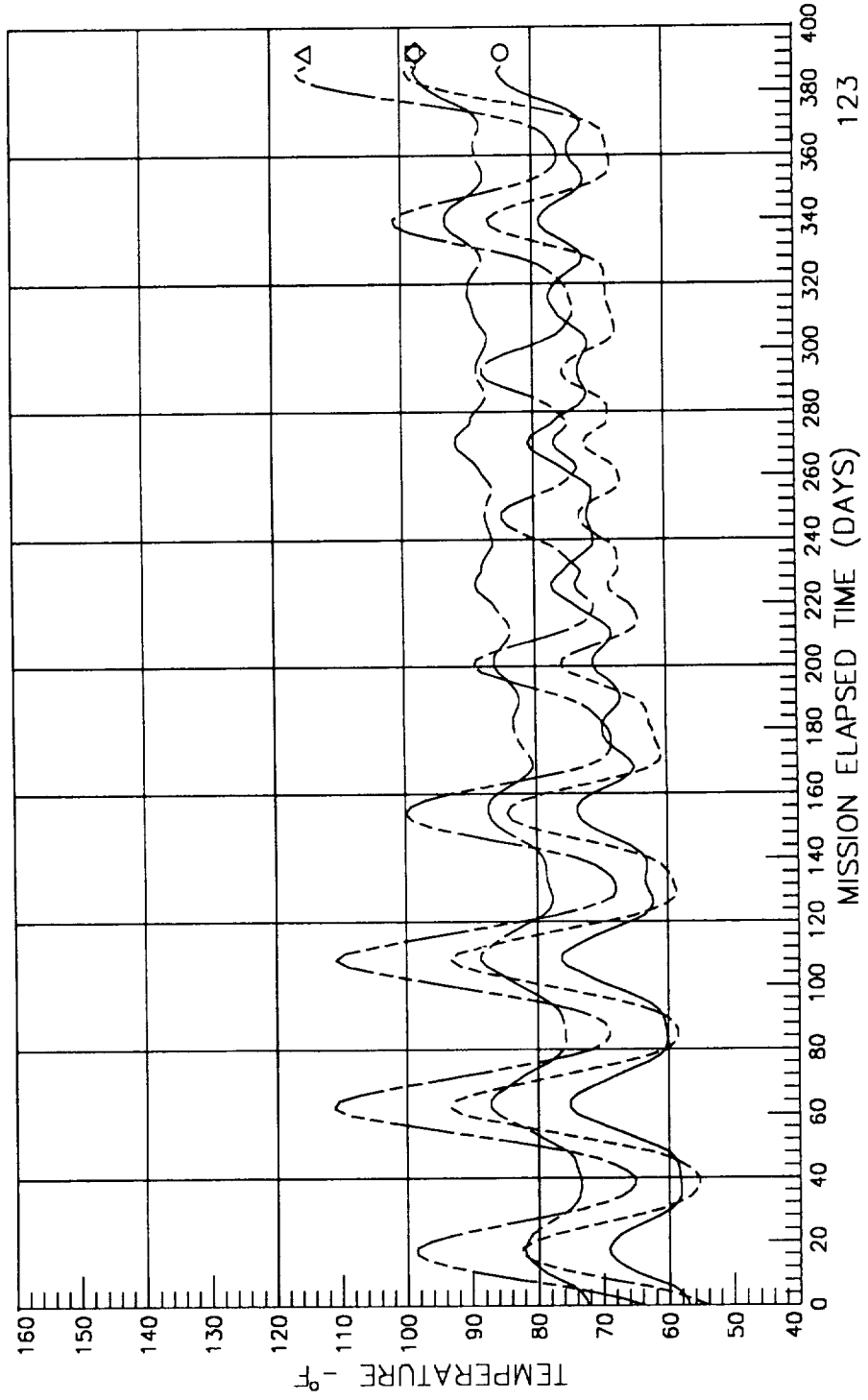
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A10

○ — 172 LONGERON 9-10  
 □ - - - 173 LONGERON 10-11  
 ◇ — 184 END LONGRN 9-10  
 △ - - - 185 END LONGRN 10-11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

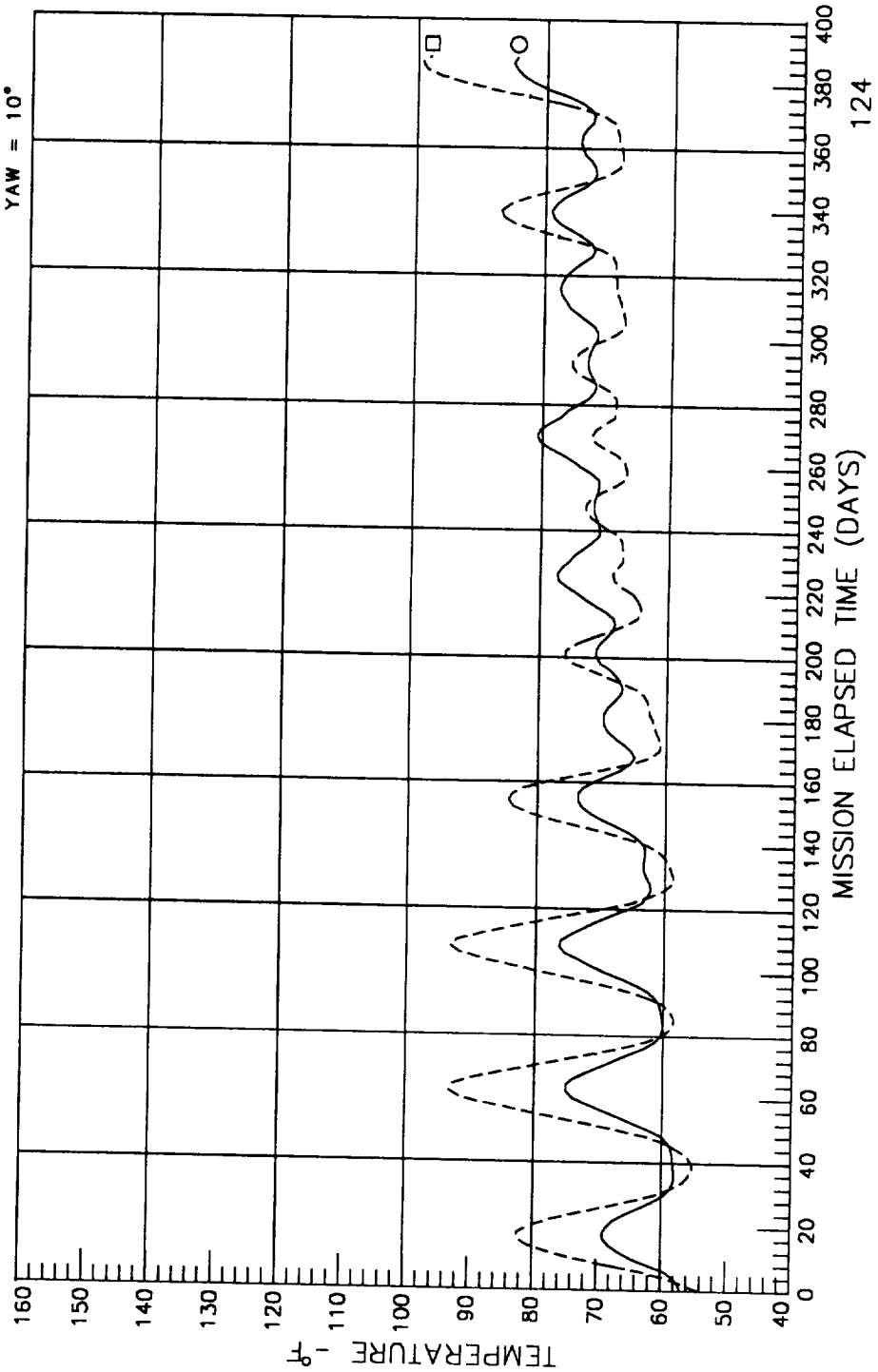


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
STRUCTURE: LOC B10 & C10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

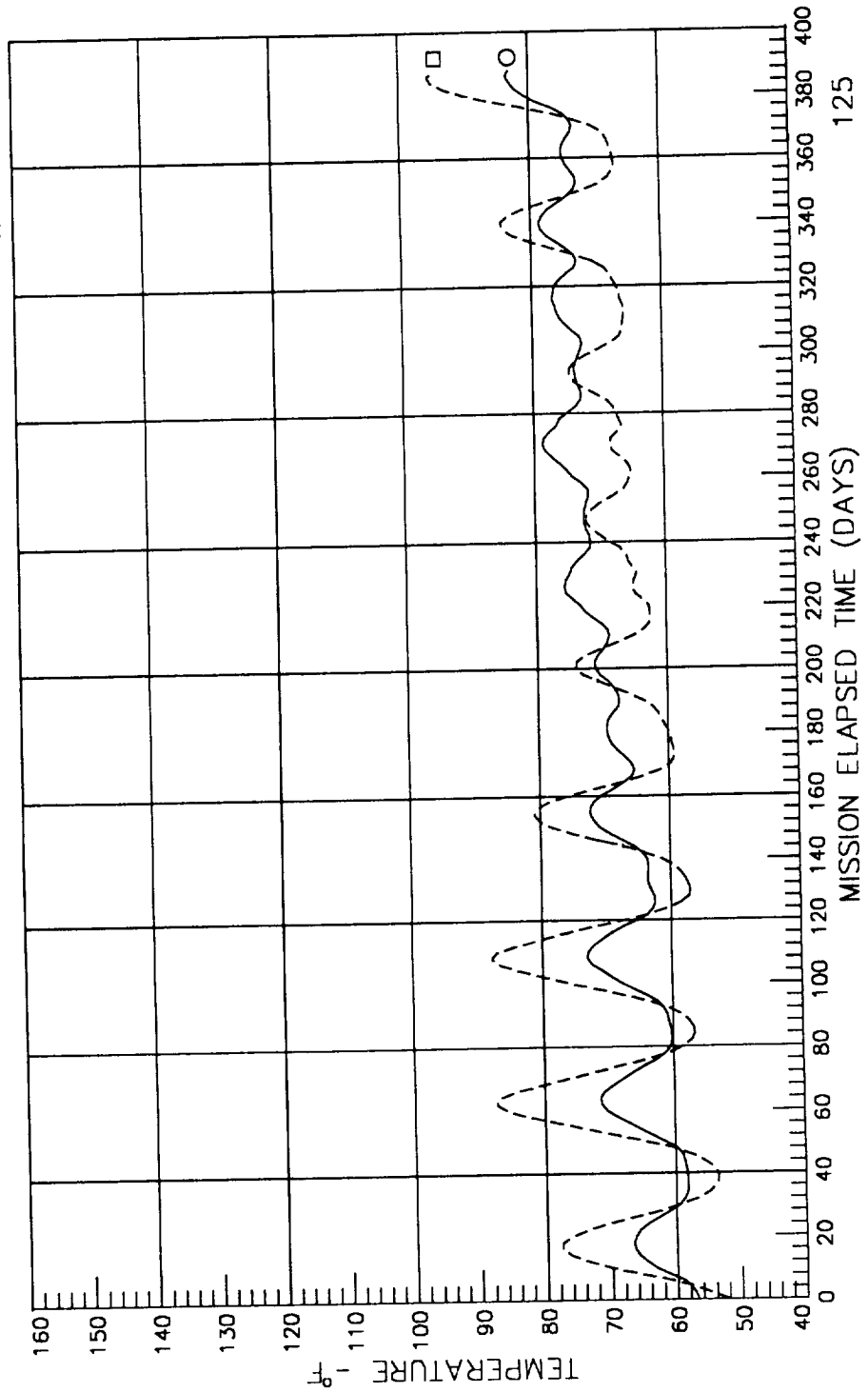
○ — 172 LONGERON 9-10  
□ - - - 173 LONGERON 10-11



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85 STRUCTURE: LOC D10 & E10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 249 LONGERON 9-10  
 □ - - - 250 LONGERON 10-11



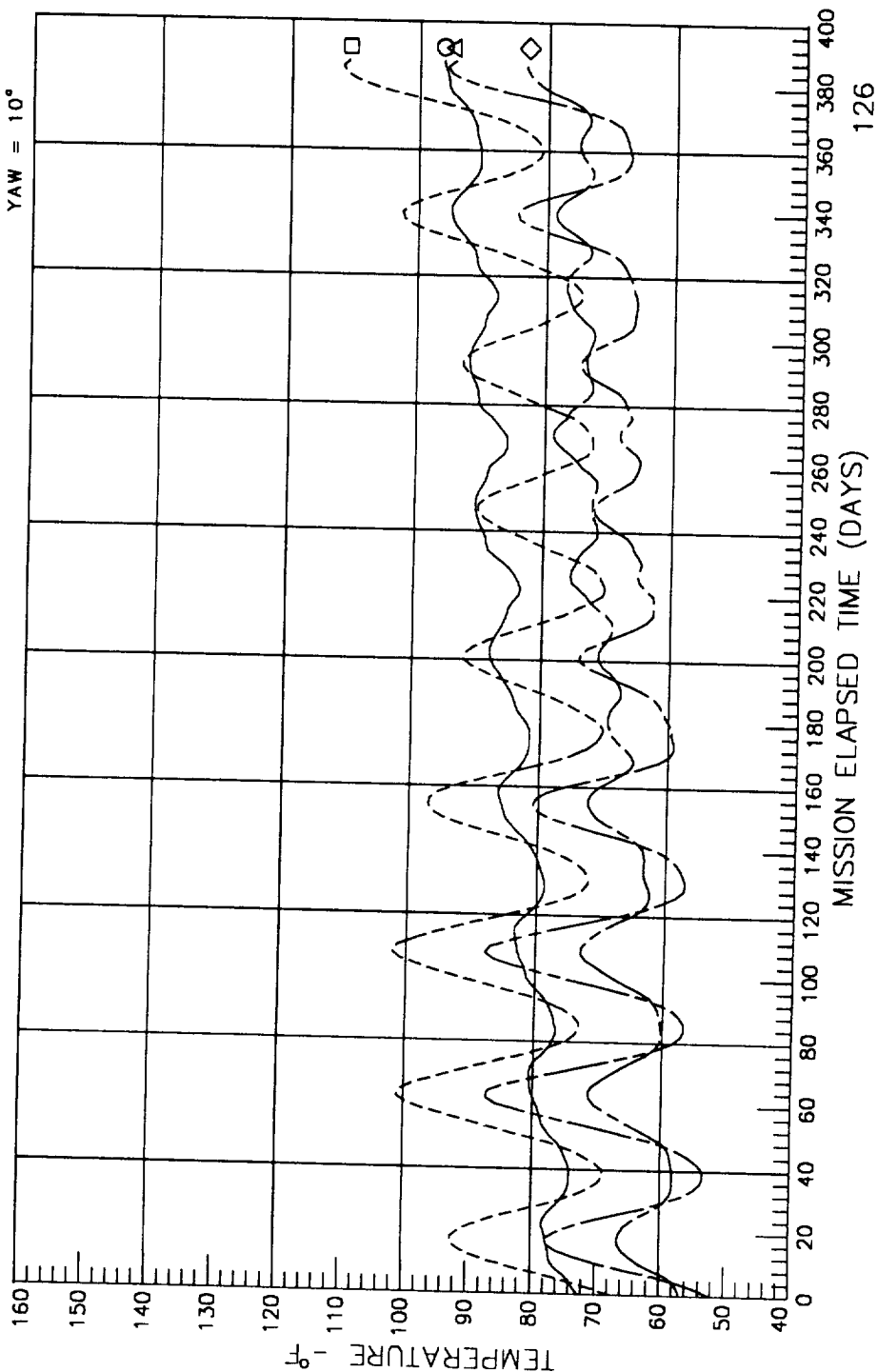
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F10

○ ——— 196 END LONGRN 9-10  
 □ - - - 197 END LONGRN 10-11  
 ◇ ——— 249 LONGERON 9-10  
 △ ——— 250 LONGERON 10-11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



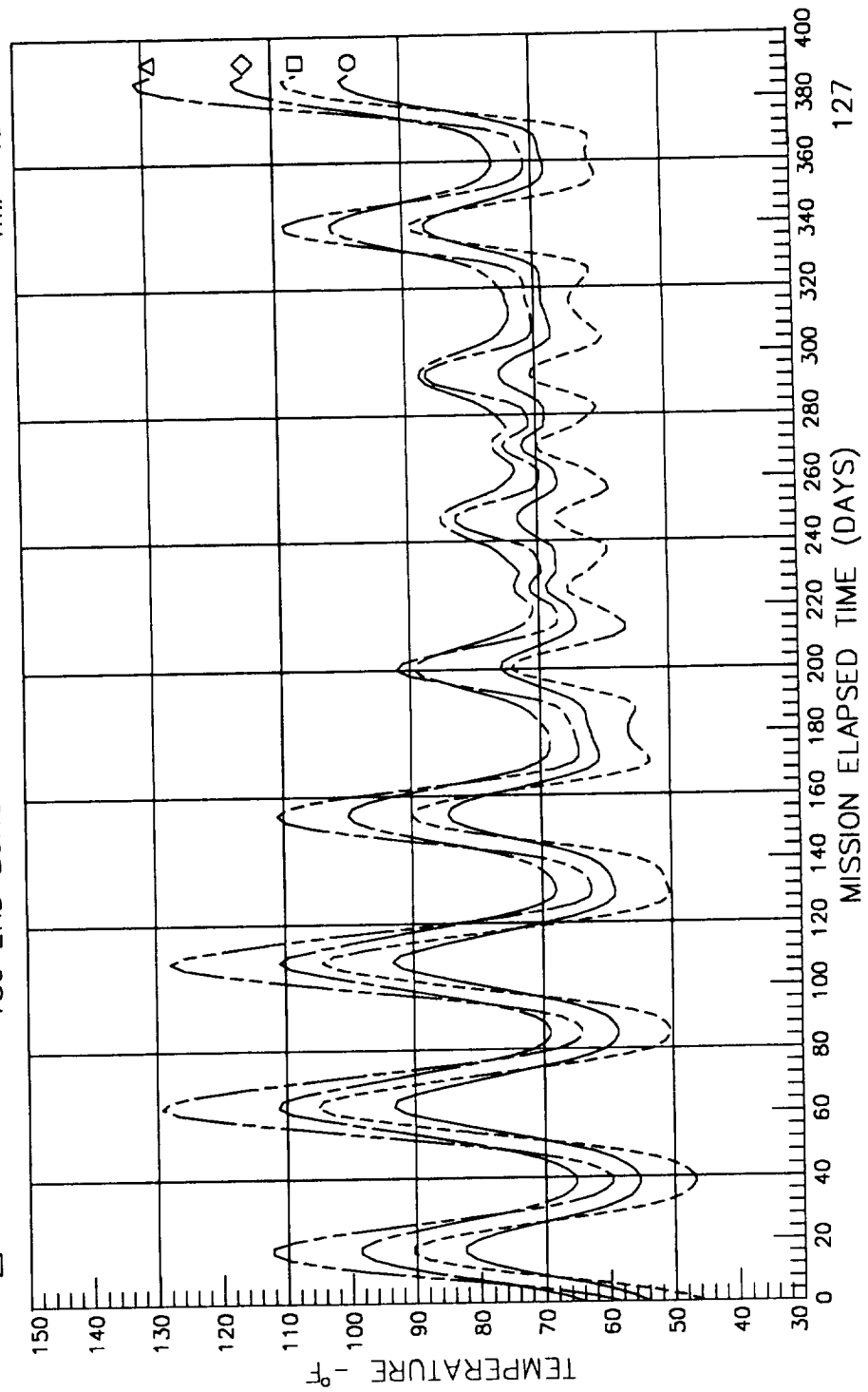
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC A11

○ — 173 LONGERON 10-11  
 □ - - 174 LONGERON 11-12  
 ◇ — 185 END LONGRN 10-11  
 △ - - 186 END LONGRN 11-12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

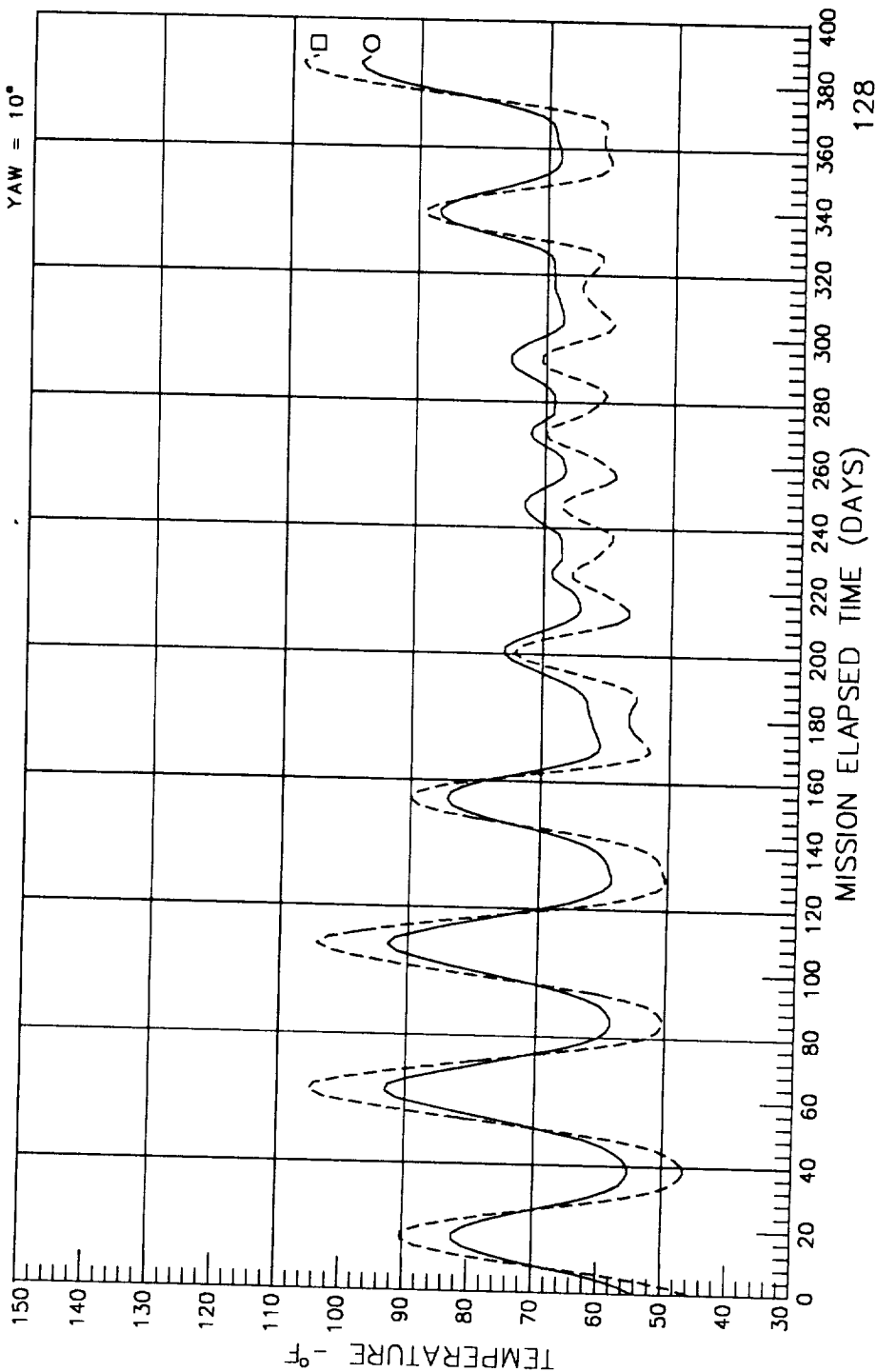


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
STRUCTURE: LOC B11 & C11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°

○ — 173 LONGERON 10-11  
□ - - - 174 LONGERON 11-12





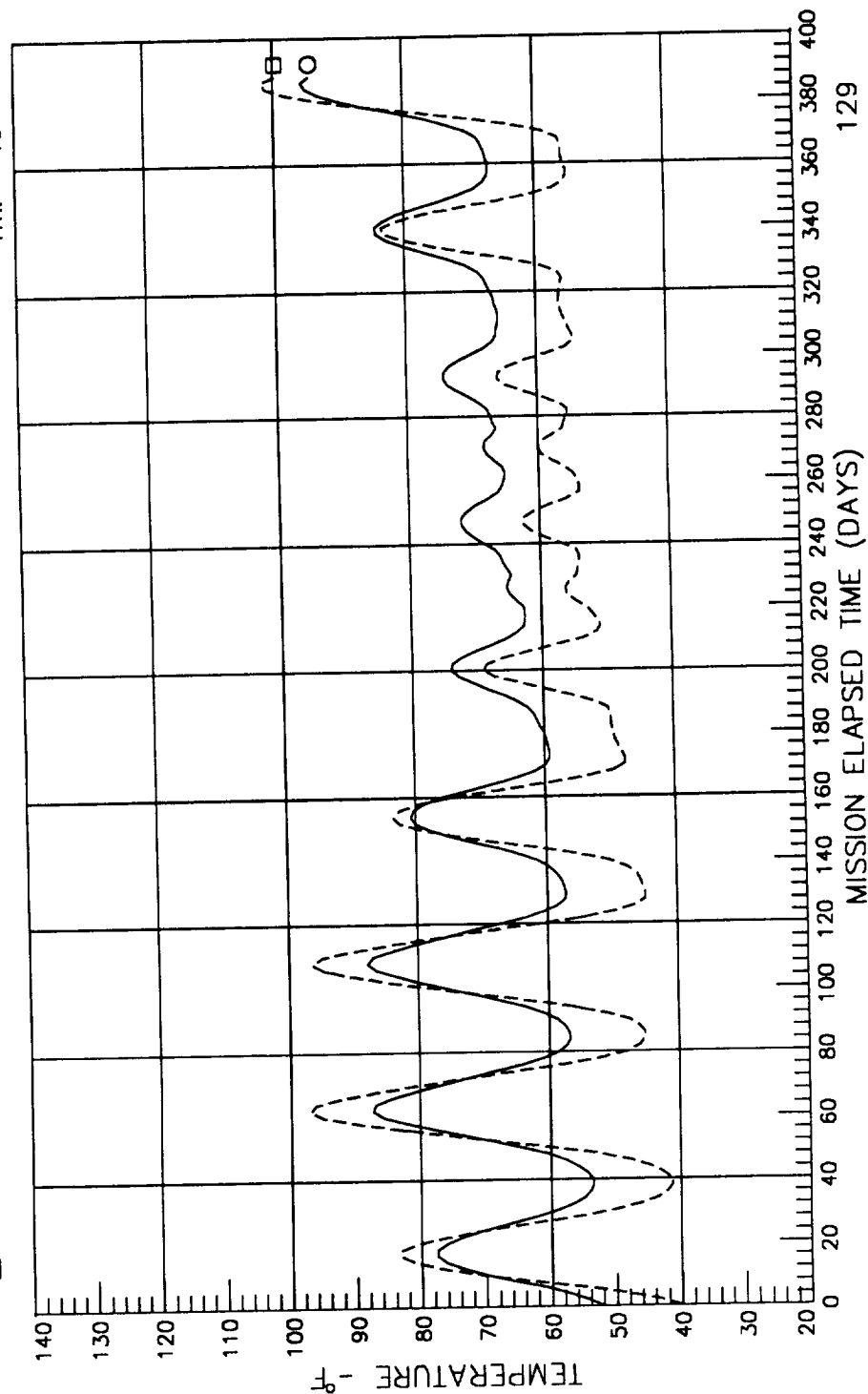
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC 011 & E11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 250 LONGERON 10-11  
 □ 251 LONGERON 11-12



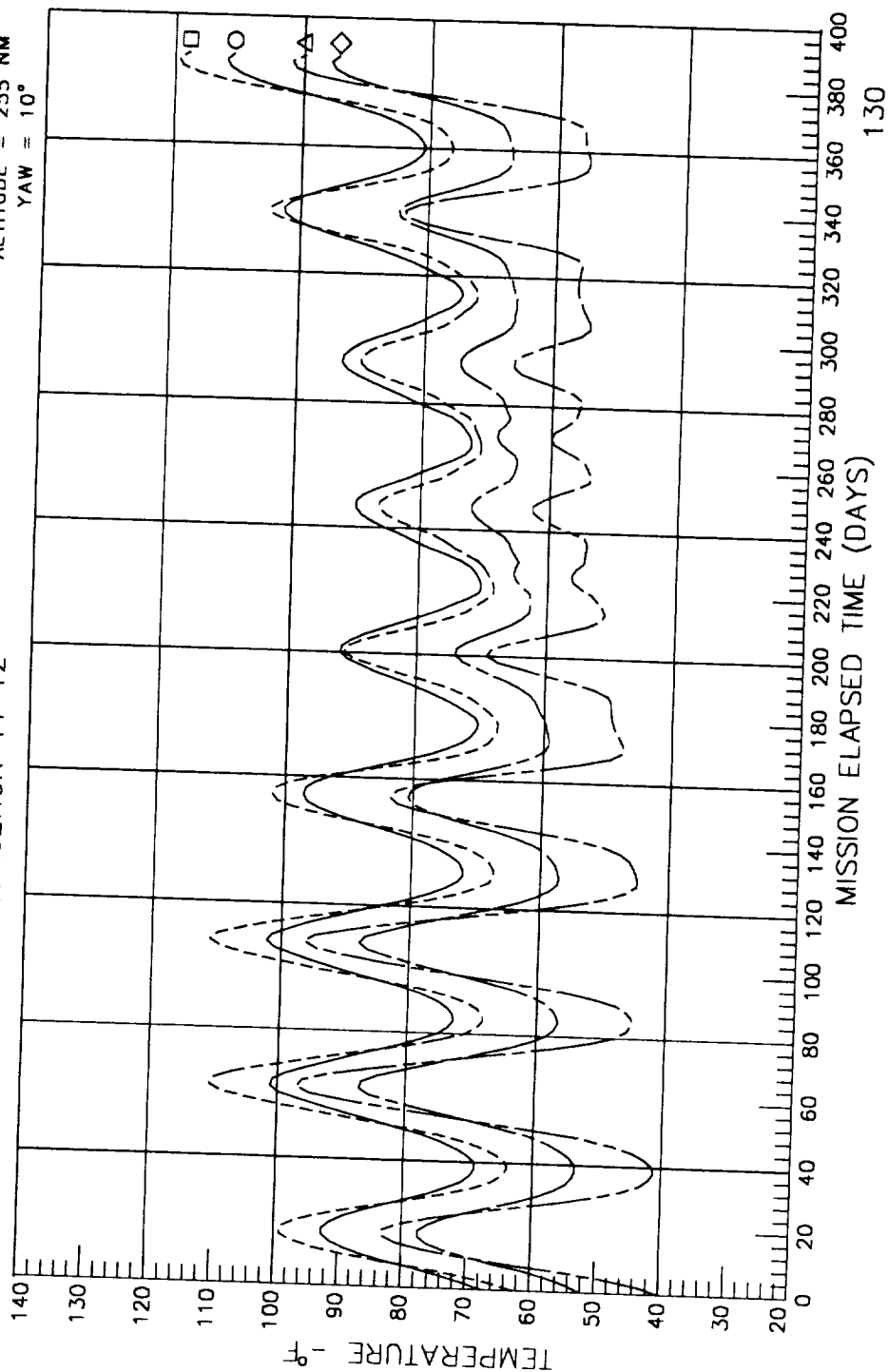
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F11

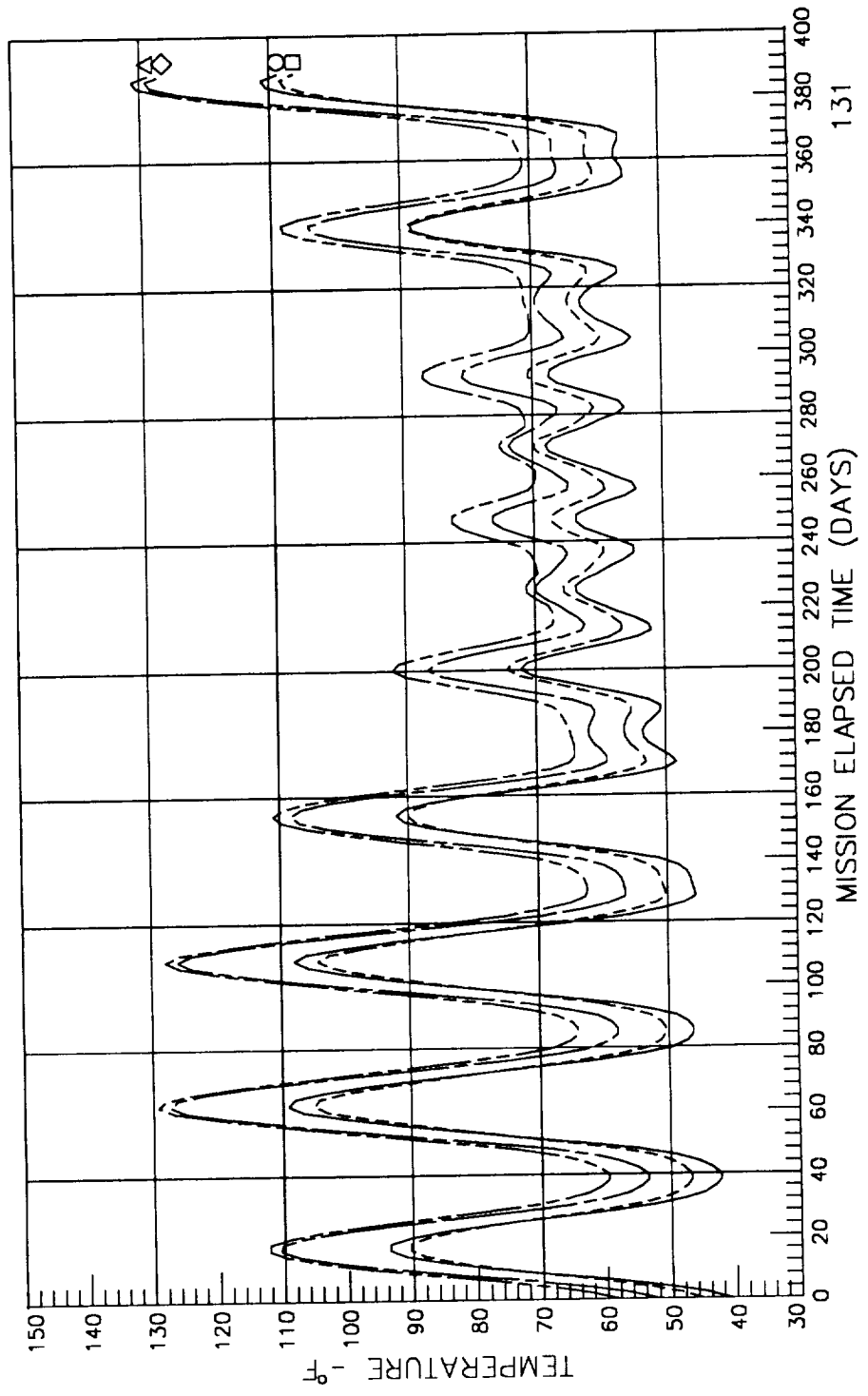
- 197 END LONGRN 10-11
- 198 END LONGRN 11-12
- ◇ 250 LONGERON 10-11
- △ 251 LONGERON 11-12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85 STRUCTURE: LOC A12

○	163 LONGERON 12-1	SOLAR CONSTANT = 434 BTU/HR-FT <sup>2</sup>
□	174 LONGERON 11-12	PLANETARY FLUX = 77 BTU/HR-FT <sup>2</sup>
◇	175 END LONGRN 12-1	ALBEDO = 31%
△	186 END LONGRN 11-12	ALTITUDE = 255 NM
		YAW = 10°



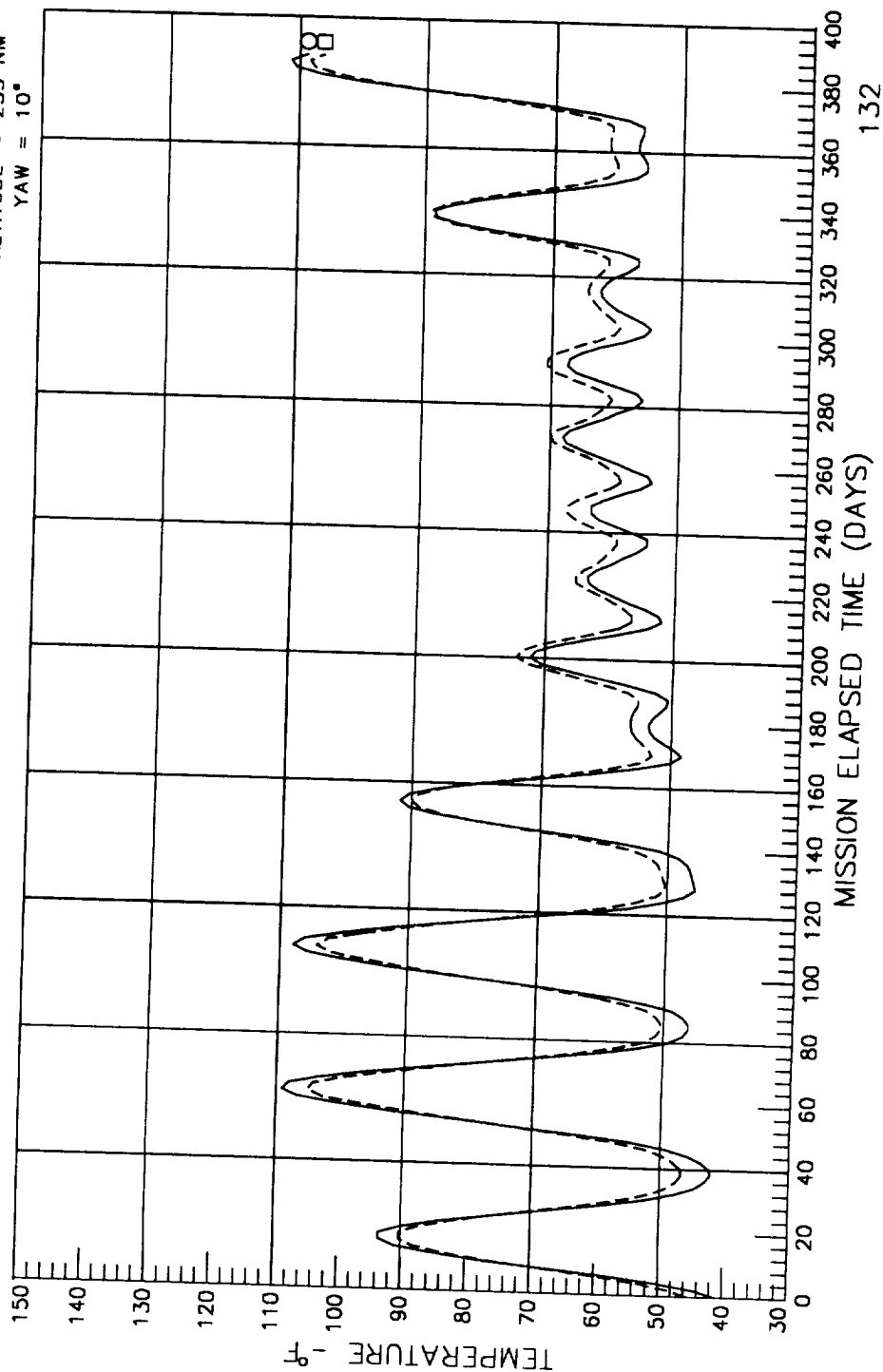
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC B12 & C12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 163 LONGERON 12-1  
 □ - - - 174 LONGERON 11-12



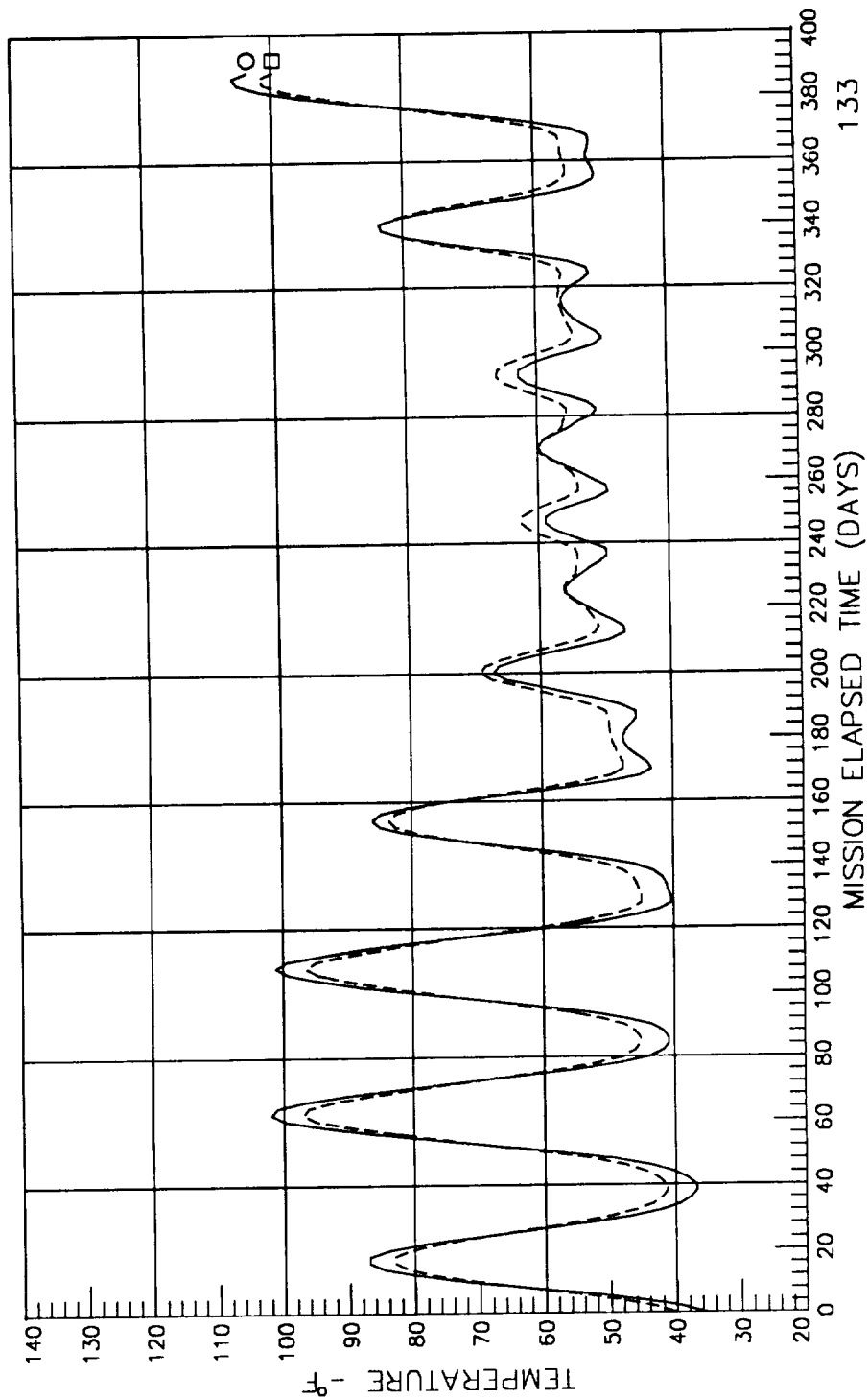
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC D12 & E12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 240 LONGERON 12-1  
 □ - - - 251 LONGERON 11-12



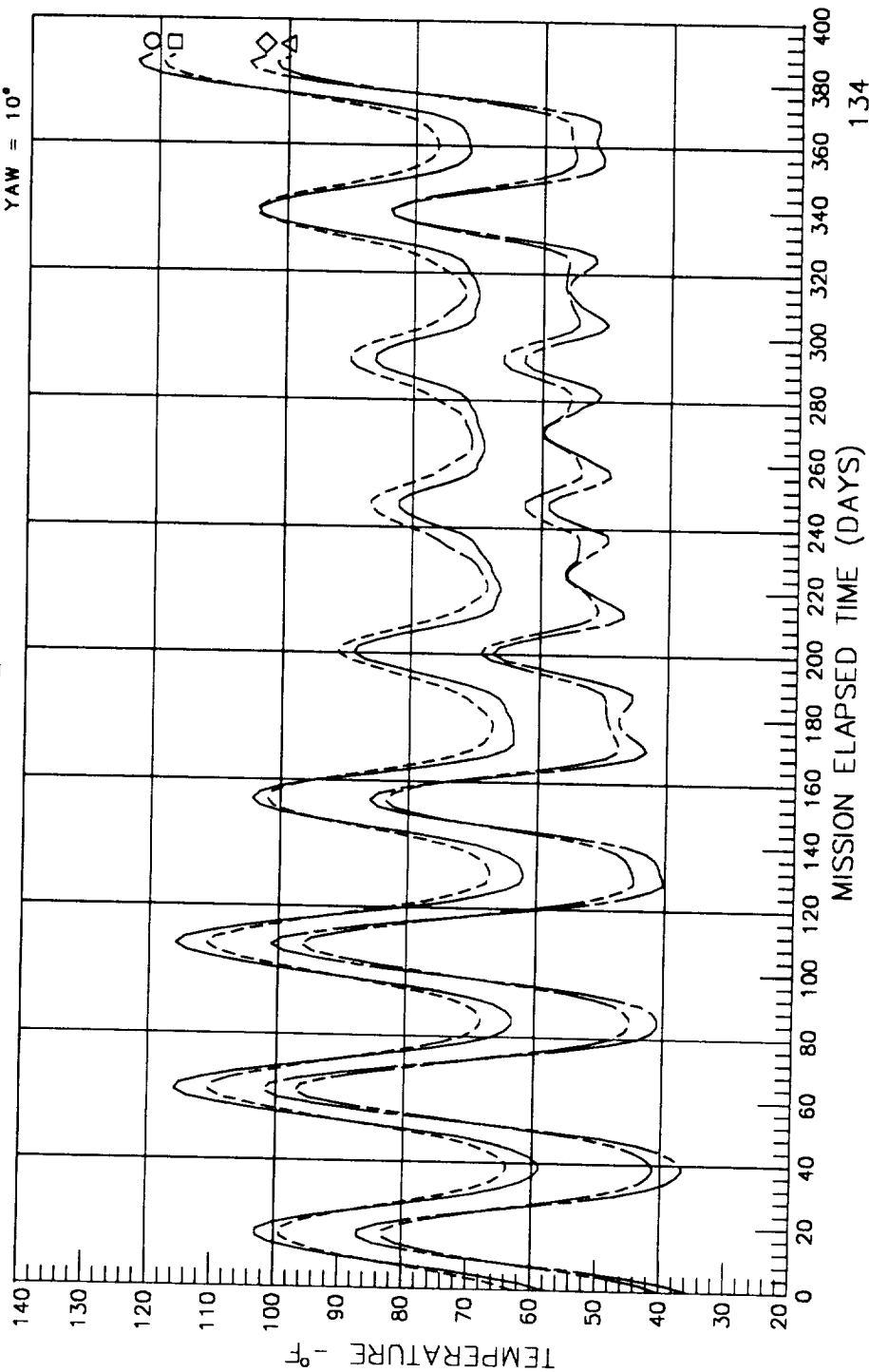
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC F12

- — 187 END LONGRN 12-1
- - - 198 END LONGRN 11-12
- ◇ - - 240 LONGERON 12-1
- △ - - 251 LONGERON 11-12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



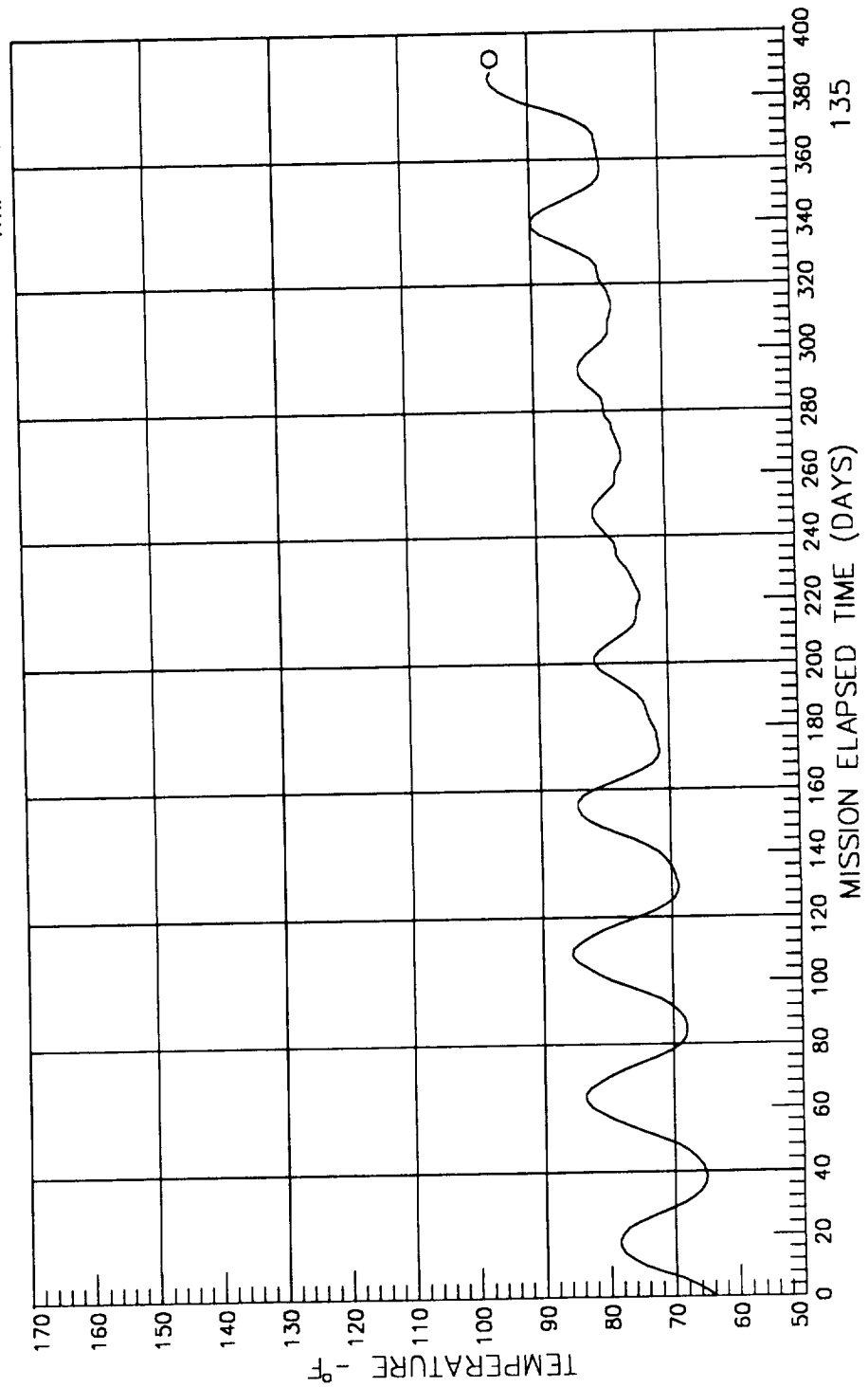
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC H1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 209 SE STRUCTURE



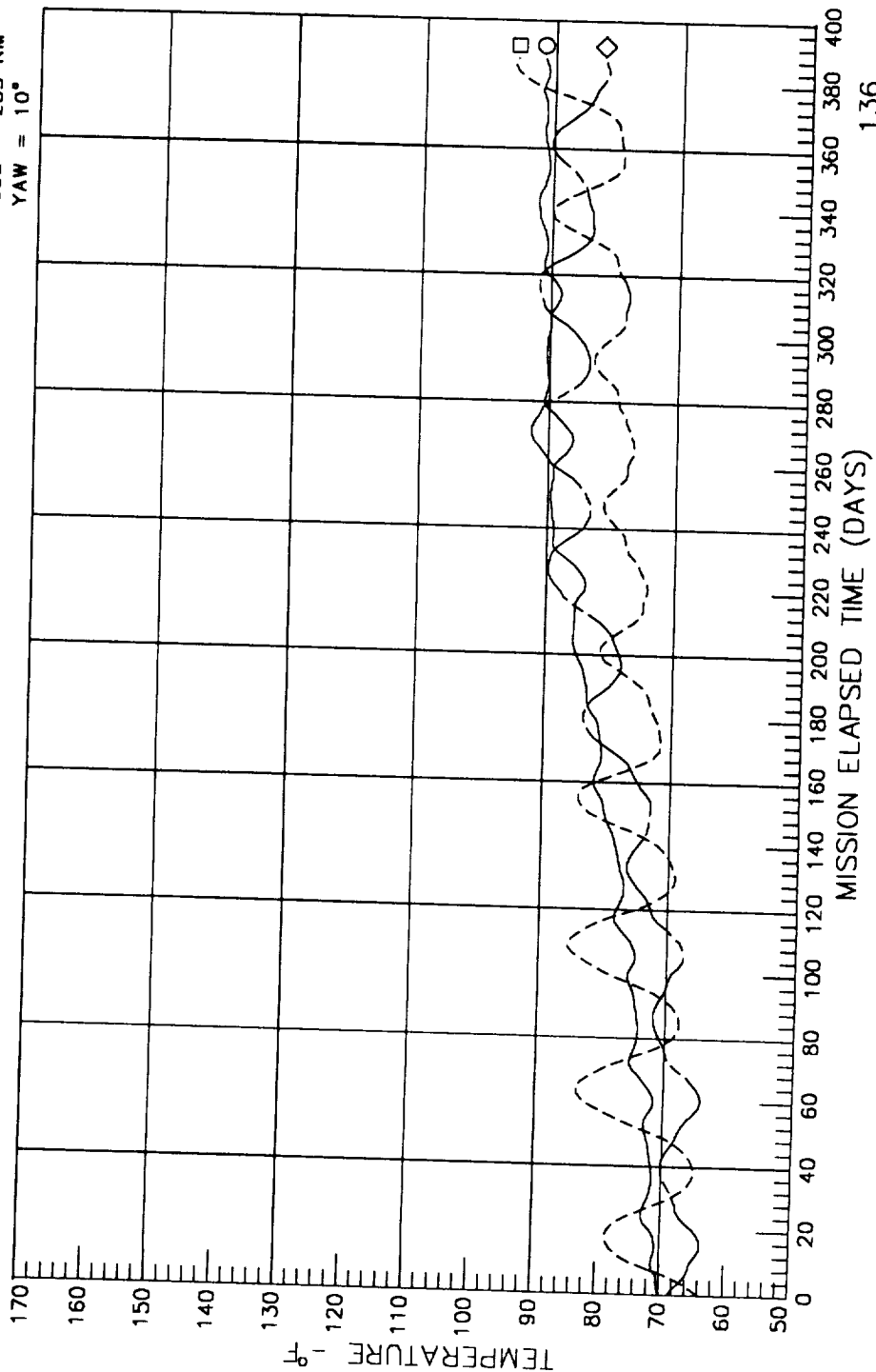
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC H3

○ — 208 SE CENTER  
 □ - - - 209 SE STRUCTURE  
 ◇ — 210 SE STRUCTURE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°





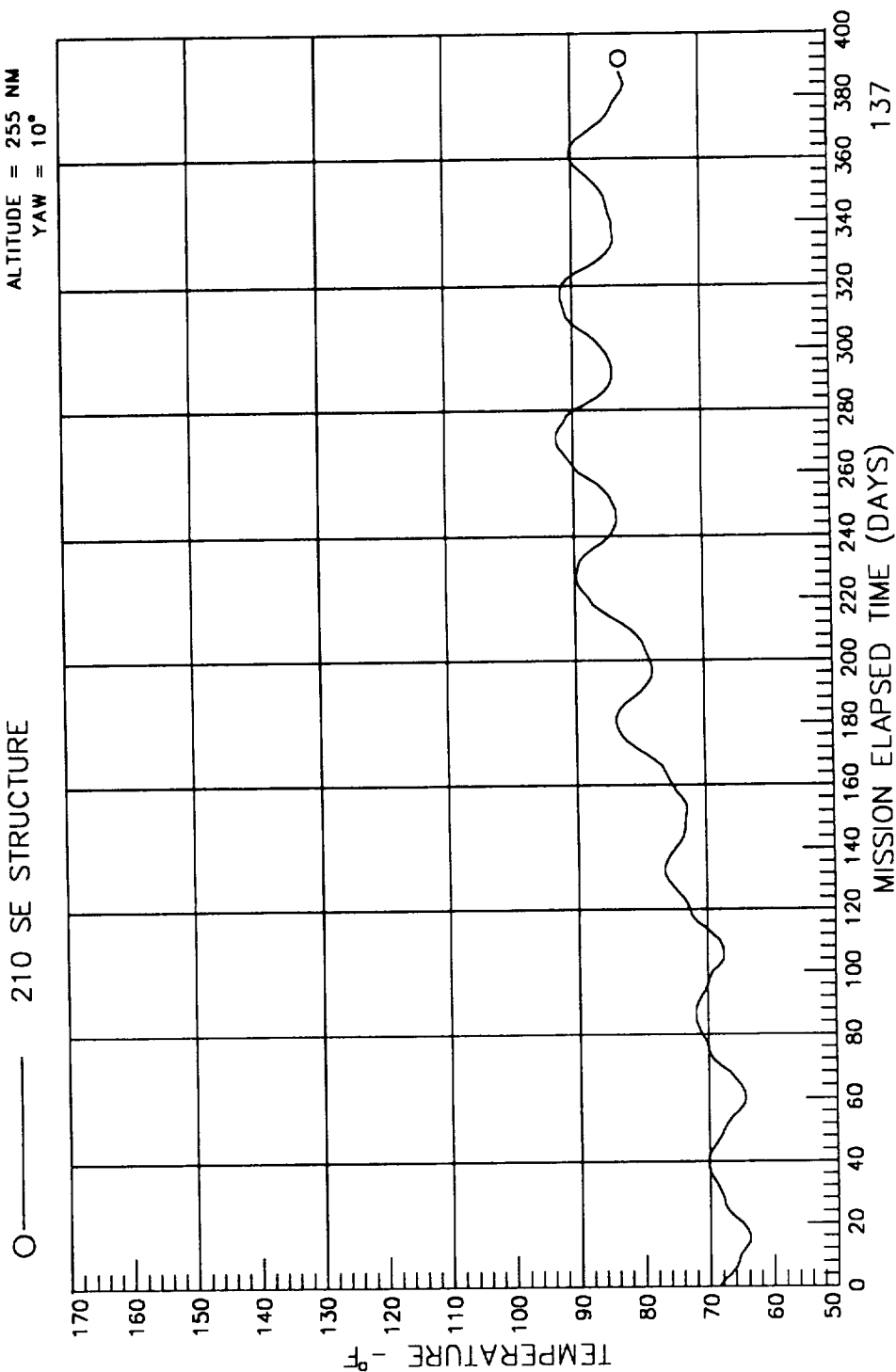
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC H5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

210 SE STRUCTURE



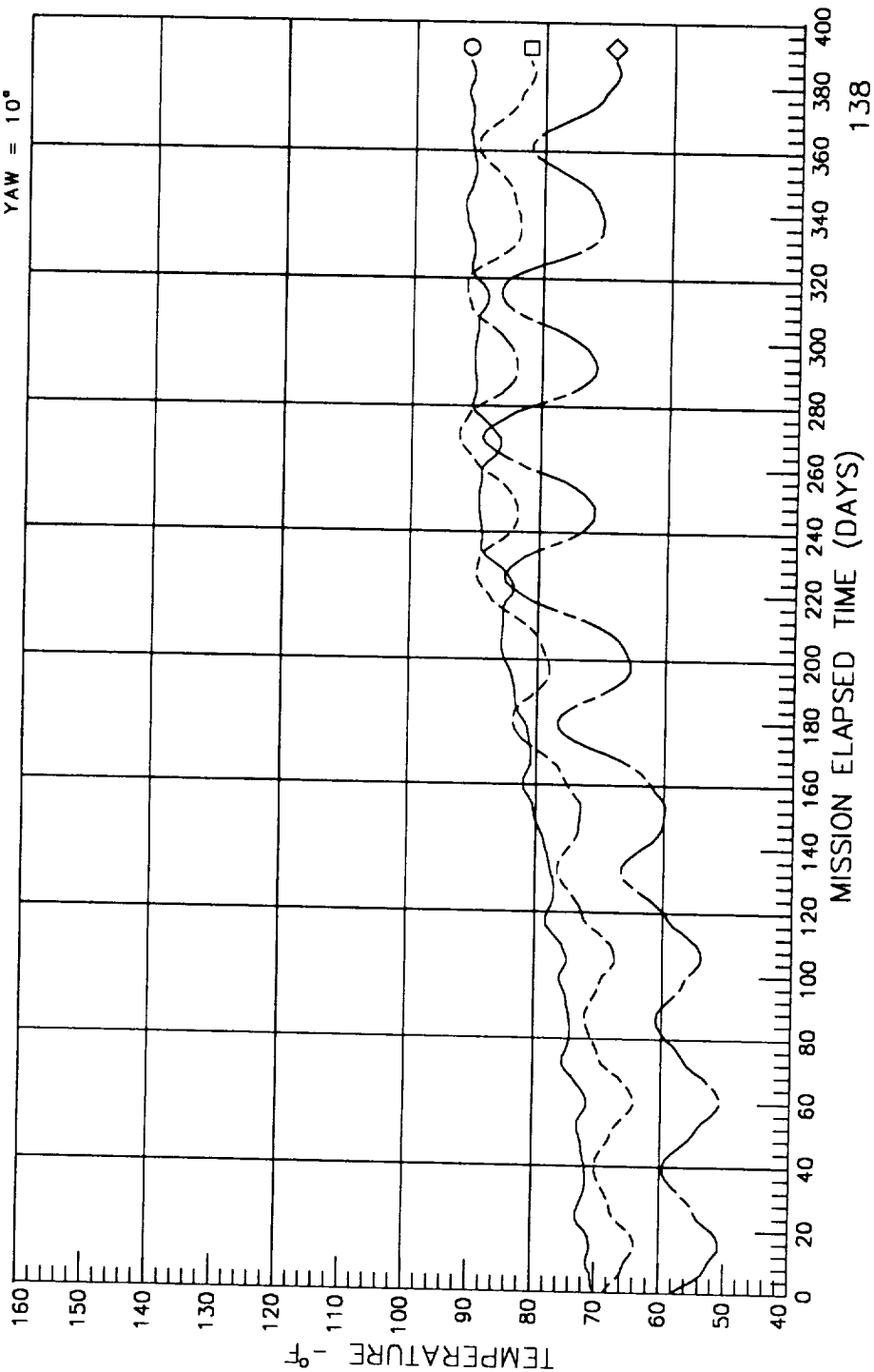
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC H6

○ 208 SE CENTER  
 □ 210 SE STRUCTURE  
 ◇ 211 SE STRUCTURE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



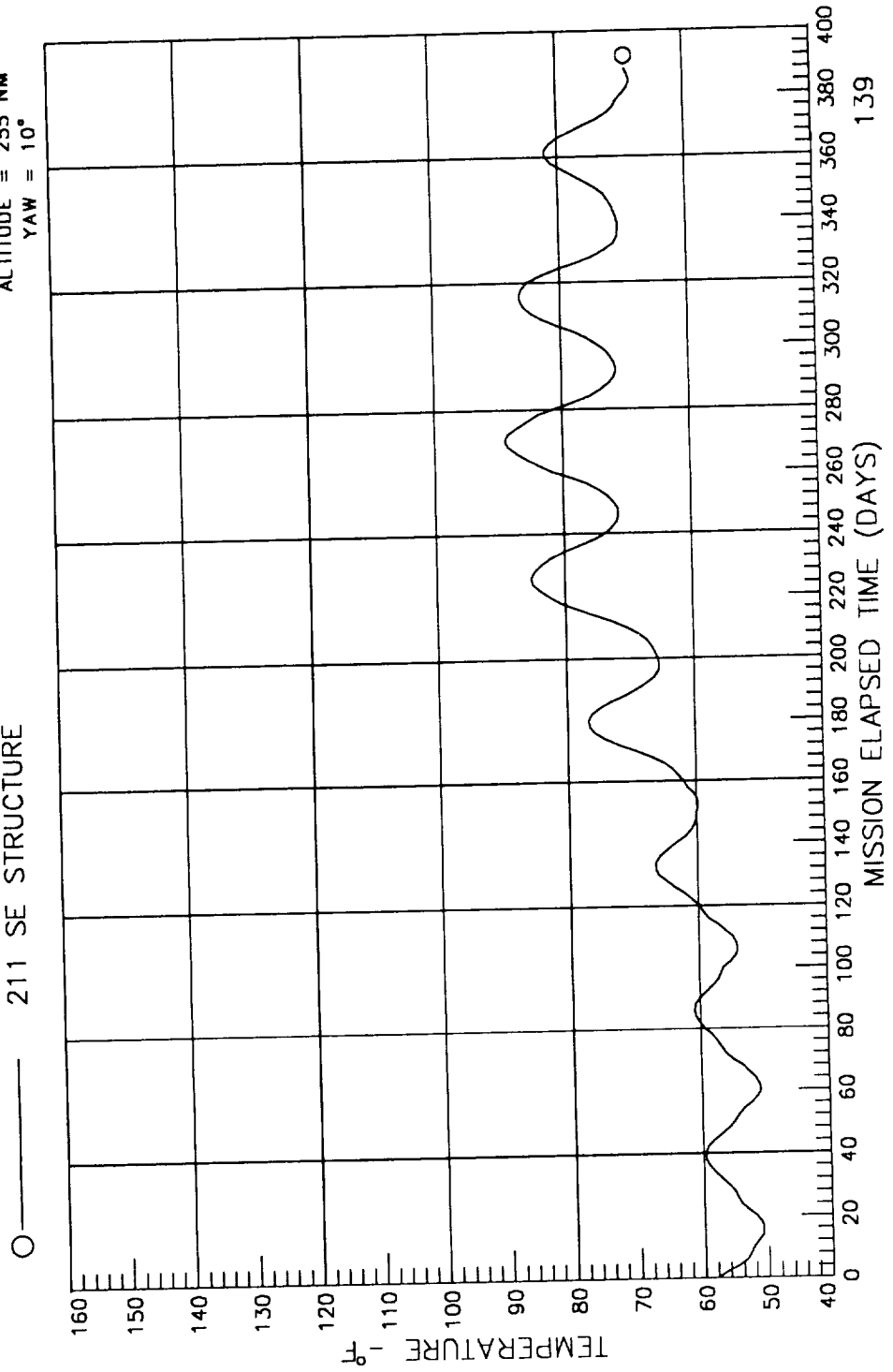
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC H7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 211 SE STRUCTURE



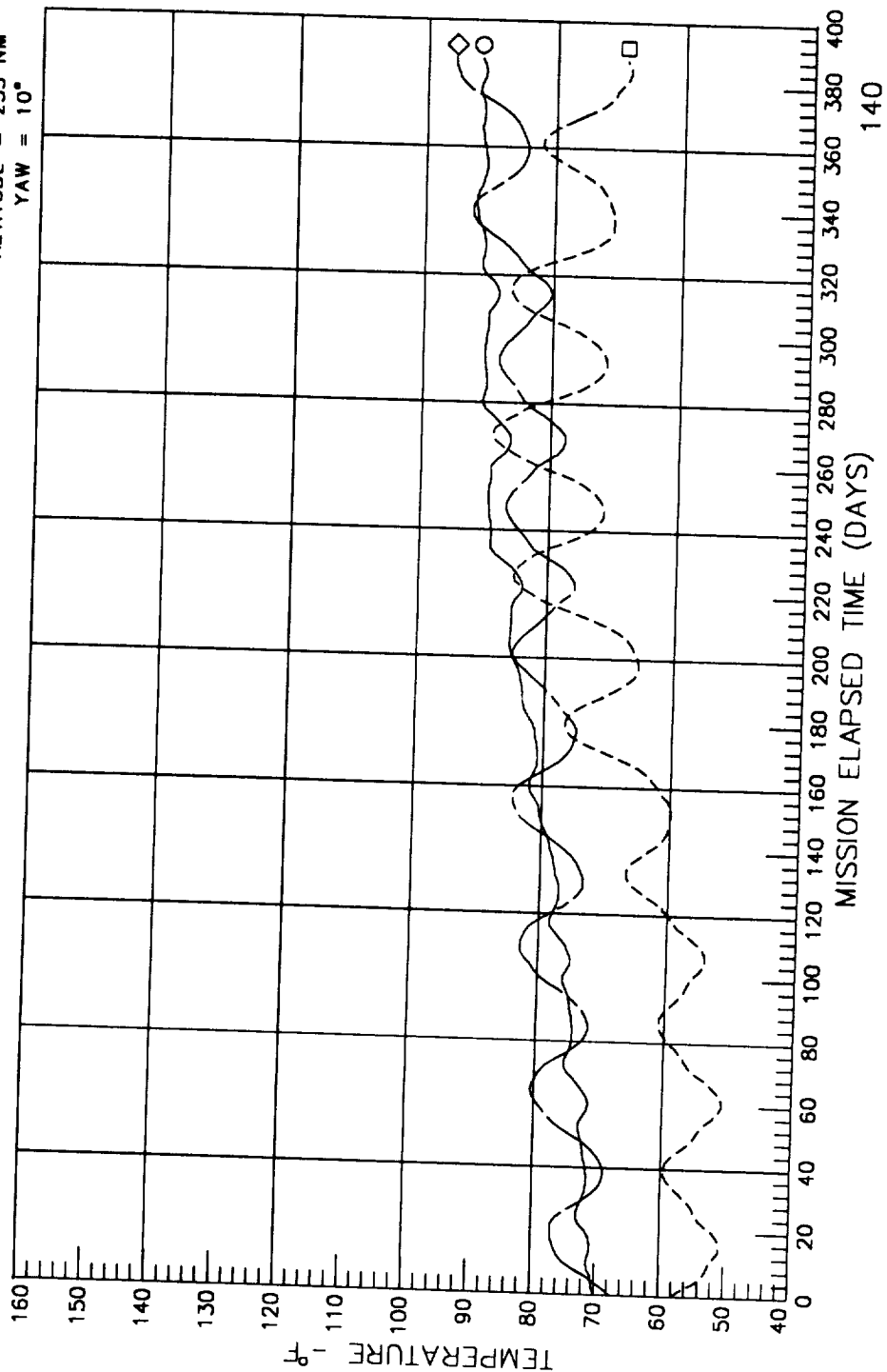
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC H9

○ 208 SE CENTER  
 □ 211 SE STRUCTURE  
 ◇ 212 SE STRUCTURE

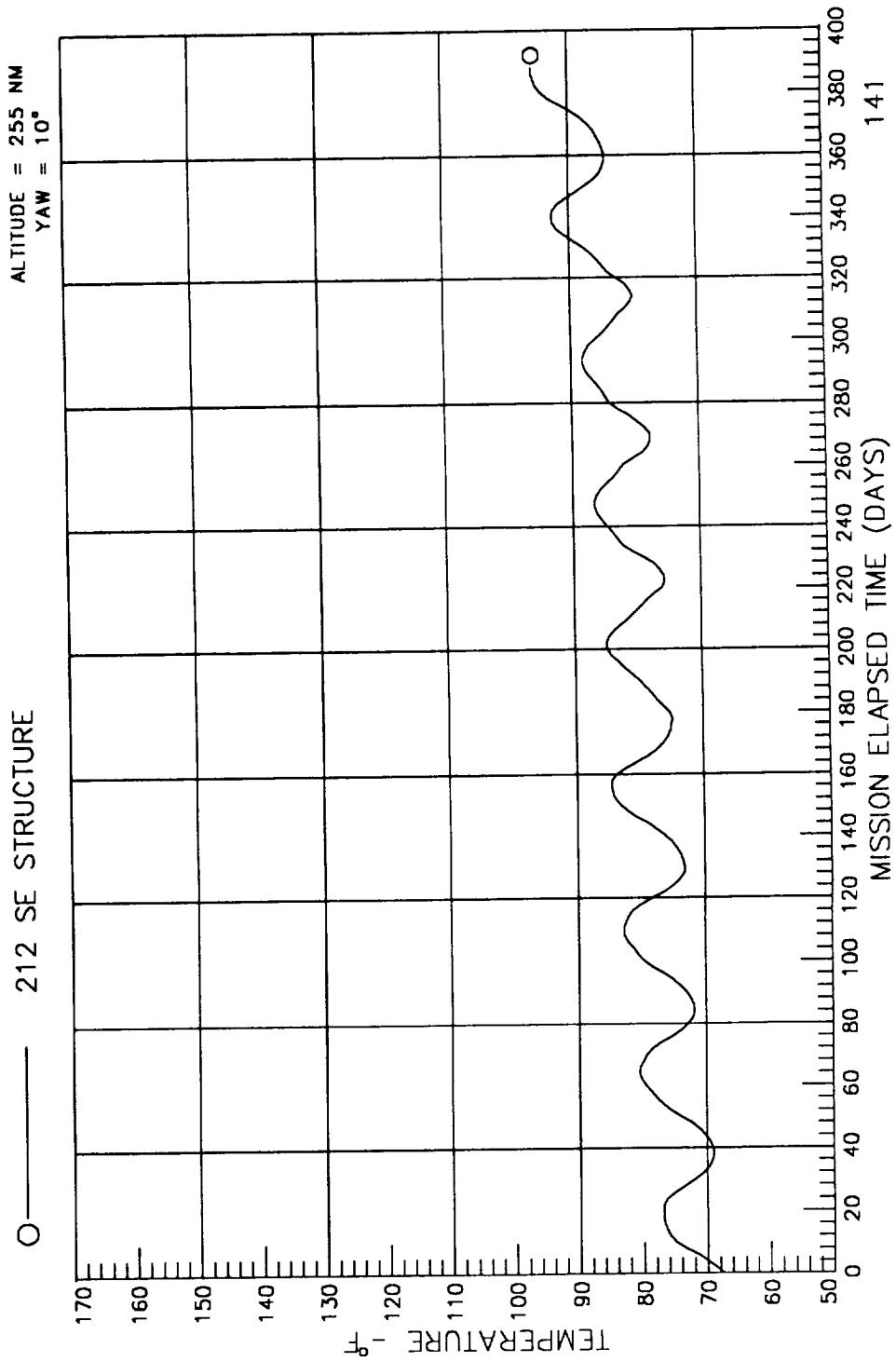
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
STRUCTURE: LOC H11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°



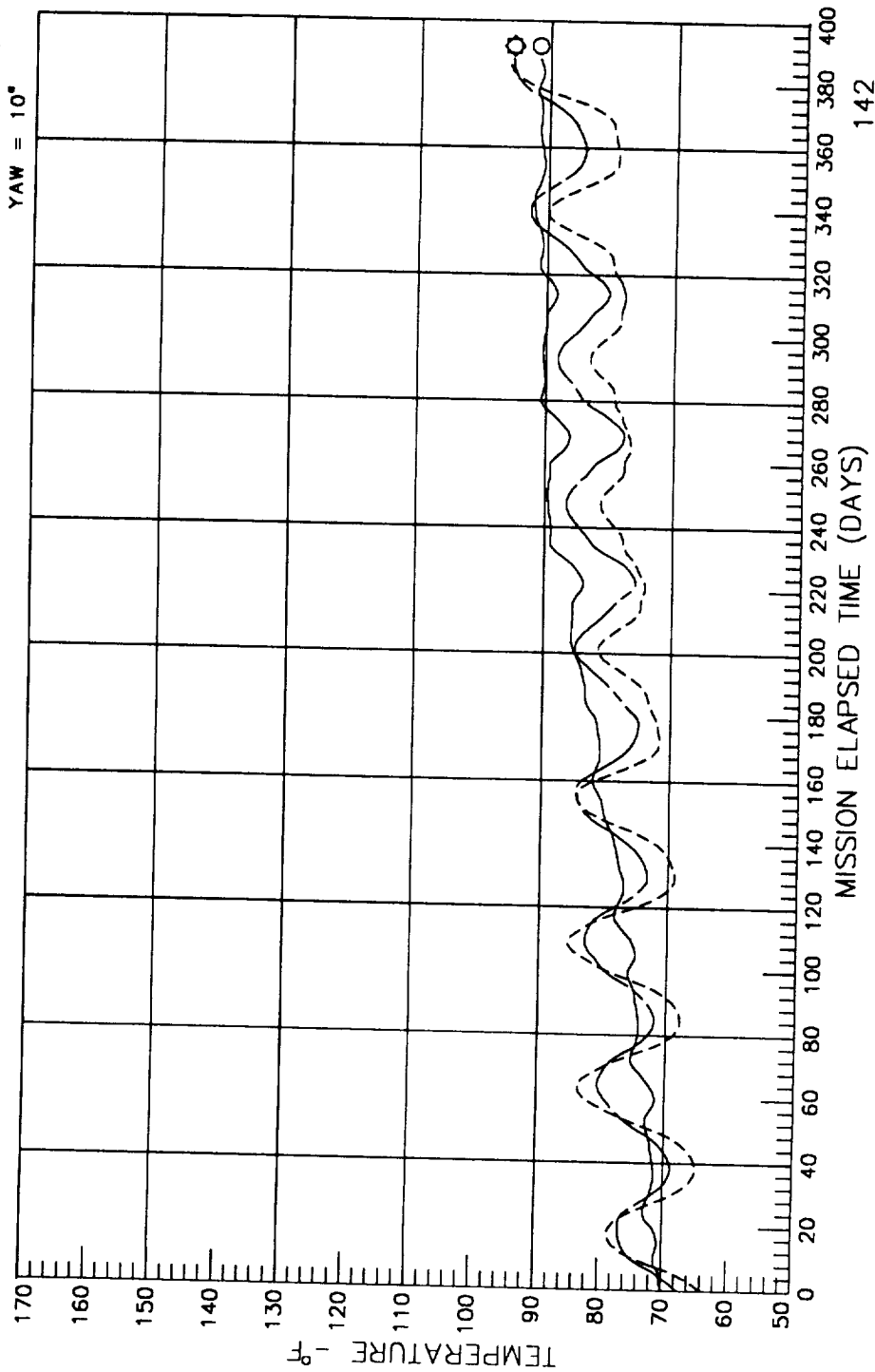
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC H12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

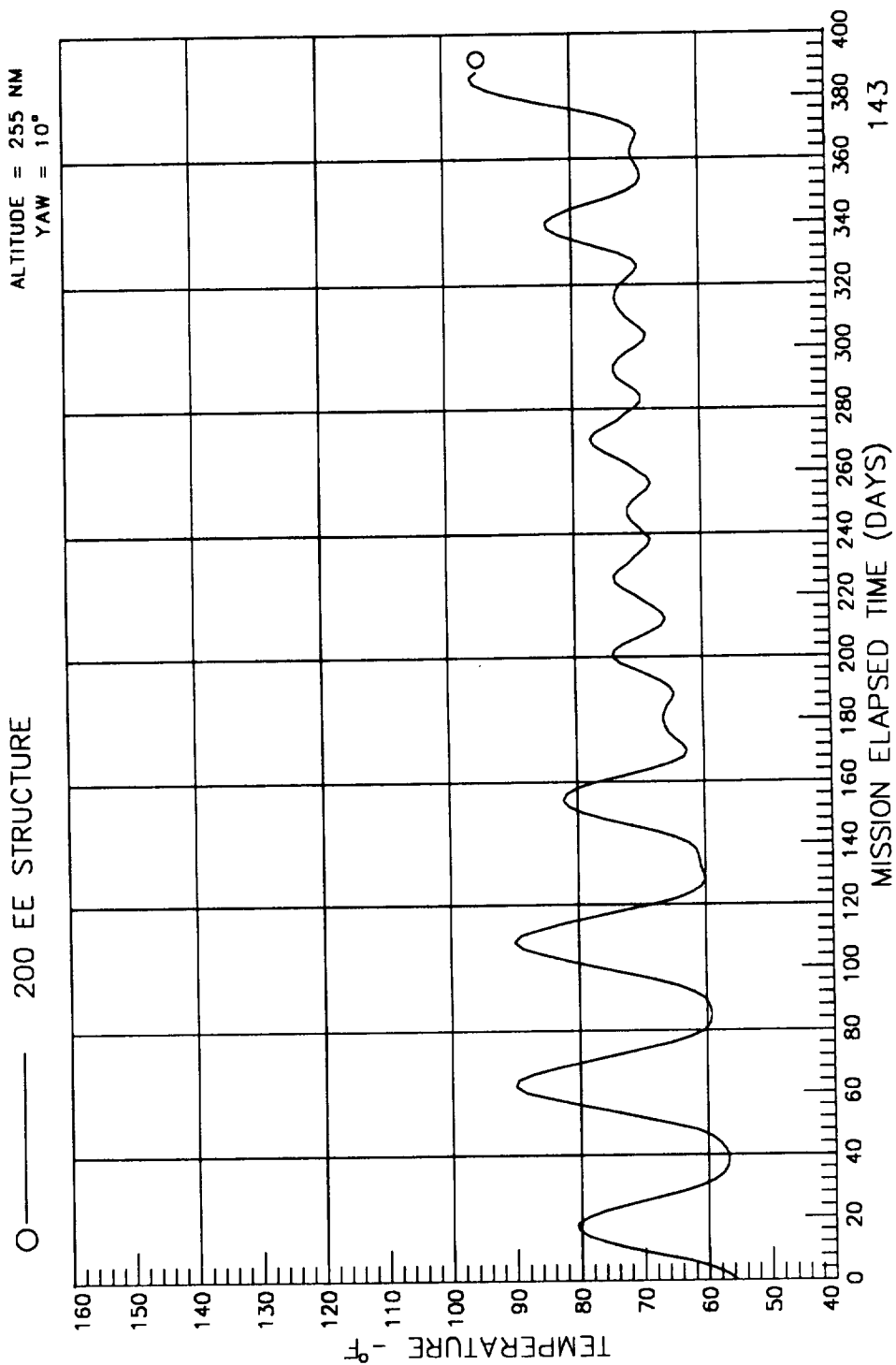
○ 208 SE CENTER  
 □ 209 SE STRUCTURE  
 ◇ 212 SE STRUCTURE



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
STRUCTURE: LOC G2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°



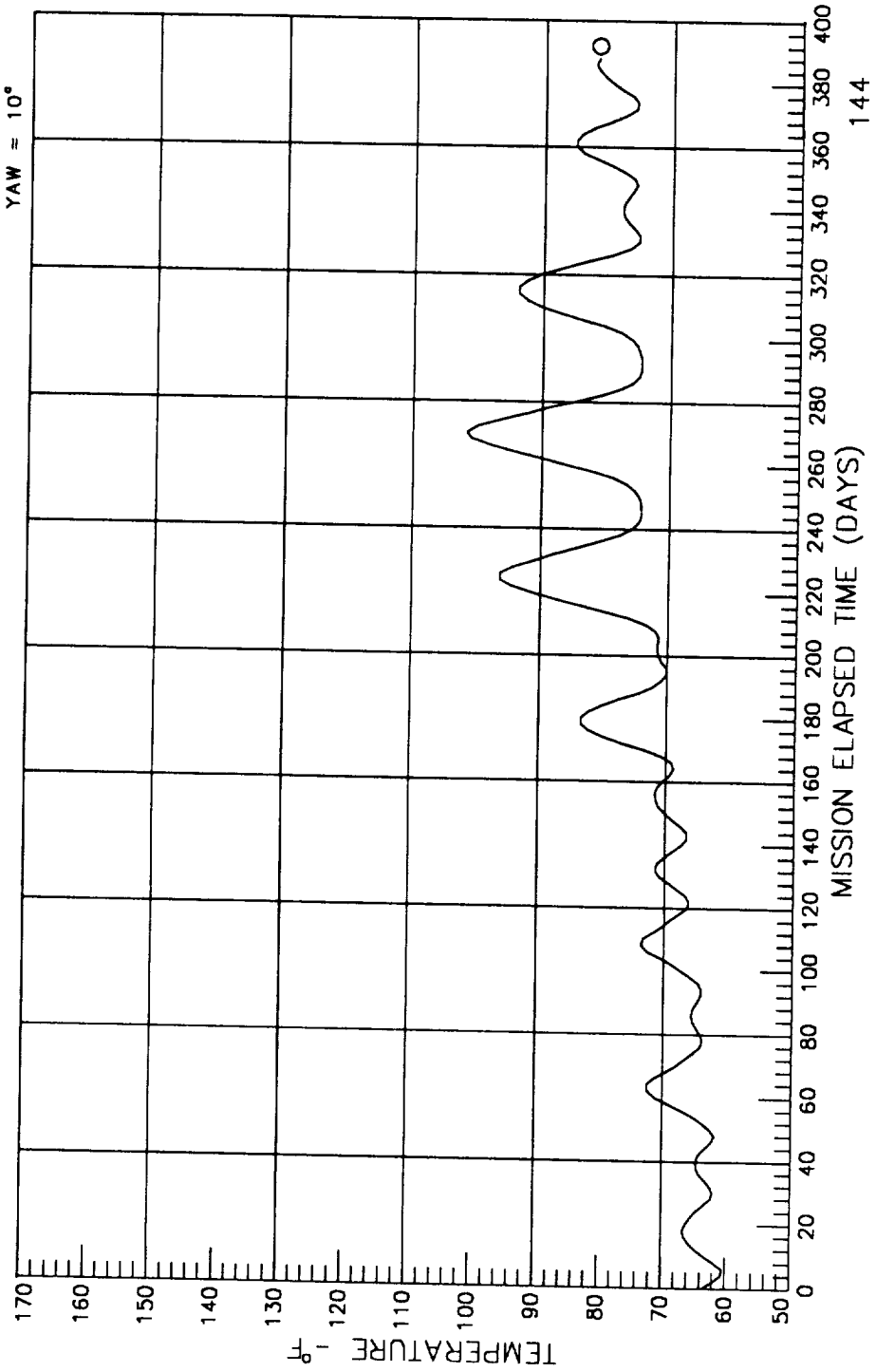
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC G4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

O ——— 201 EE STRUCTURE





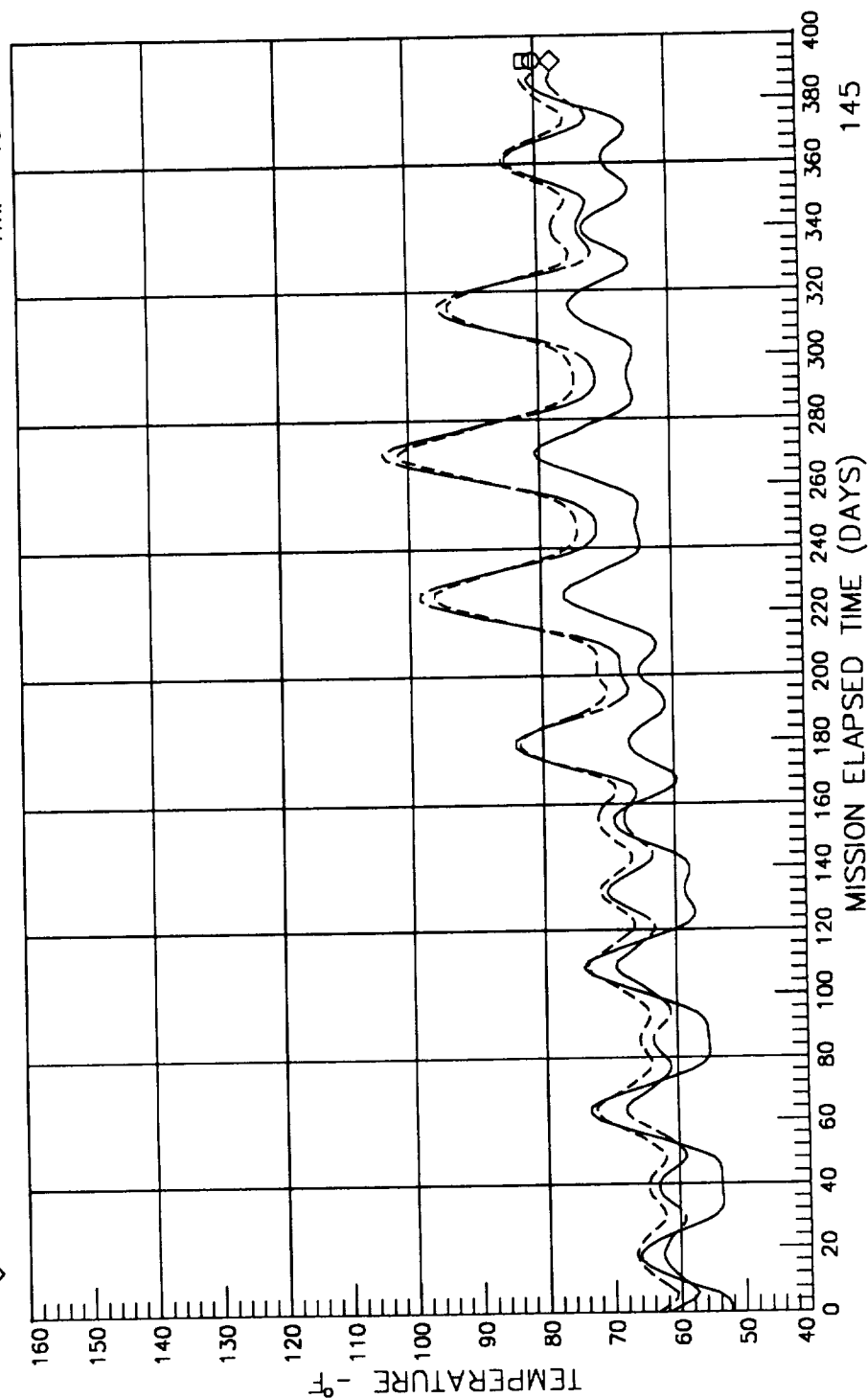
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

STRUCTURE: LOC G6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

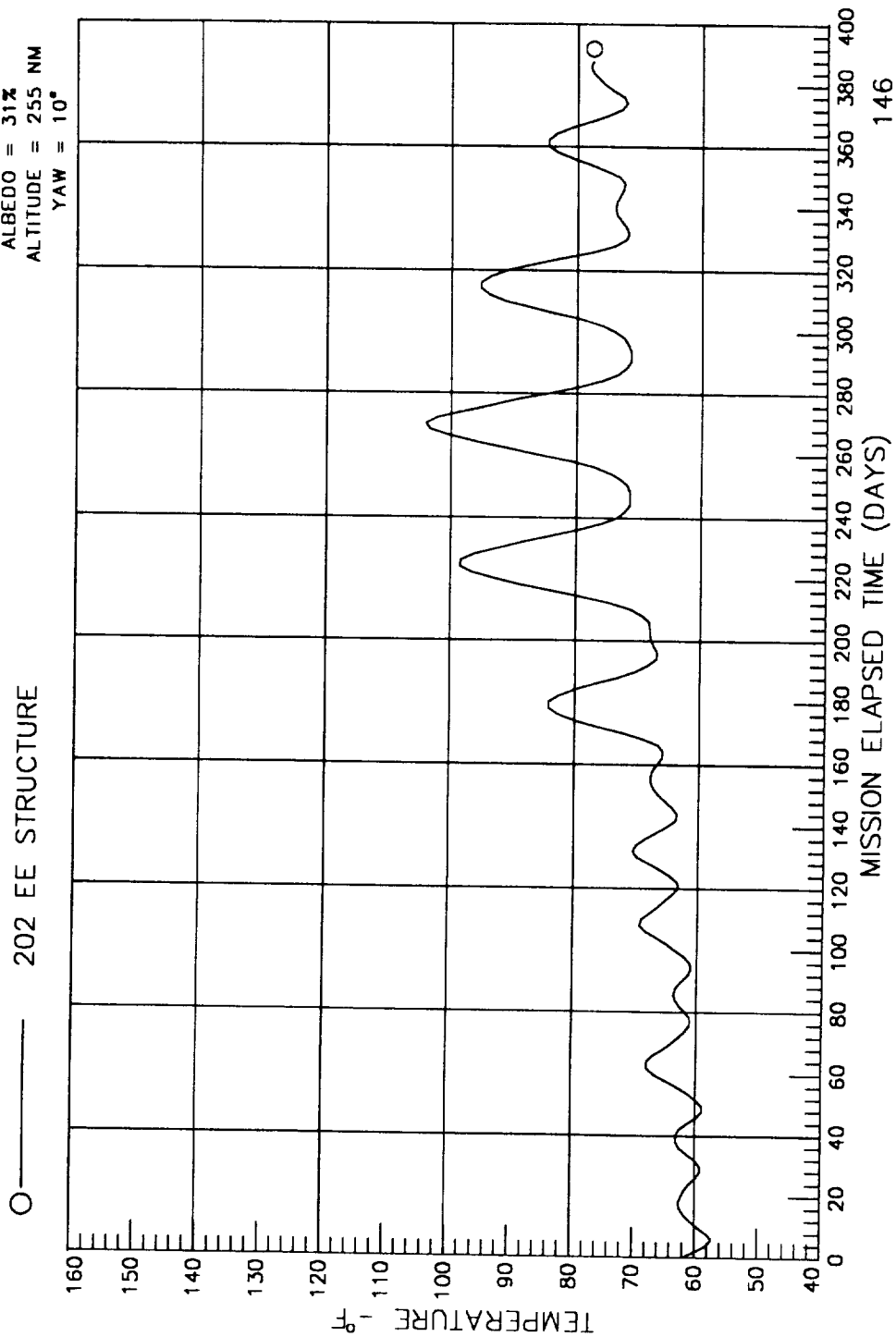
○ 199 EE CENTER  
 □ 201 EE STRUCTURE  
 ◇ 202 EE STRUCTURE



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
STRUCTURE: LOC 68

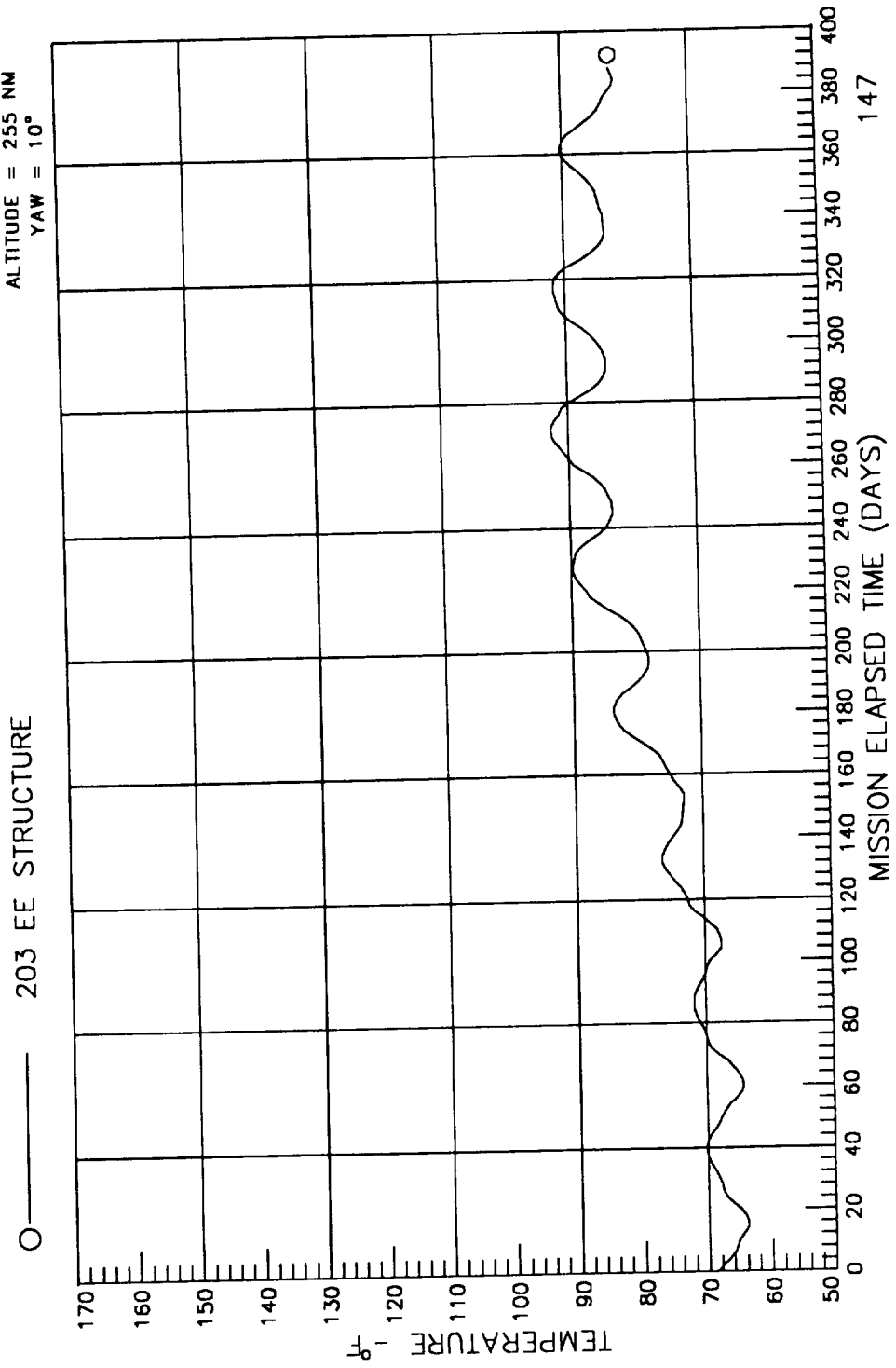
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85  
STRUCTURE: LOC G10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 255 NM  
YAW = 10°



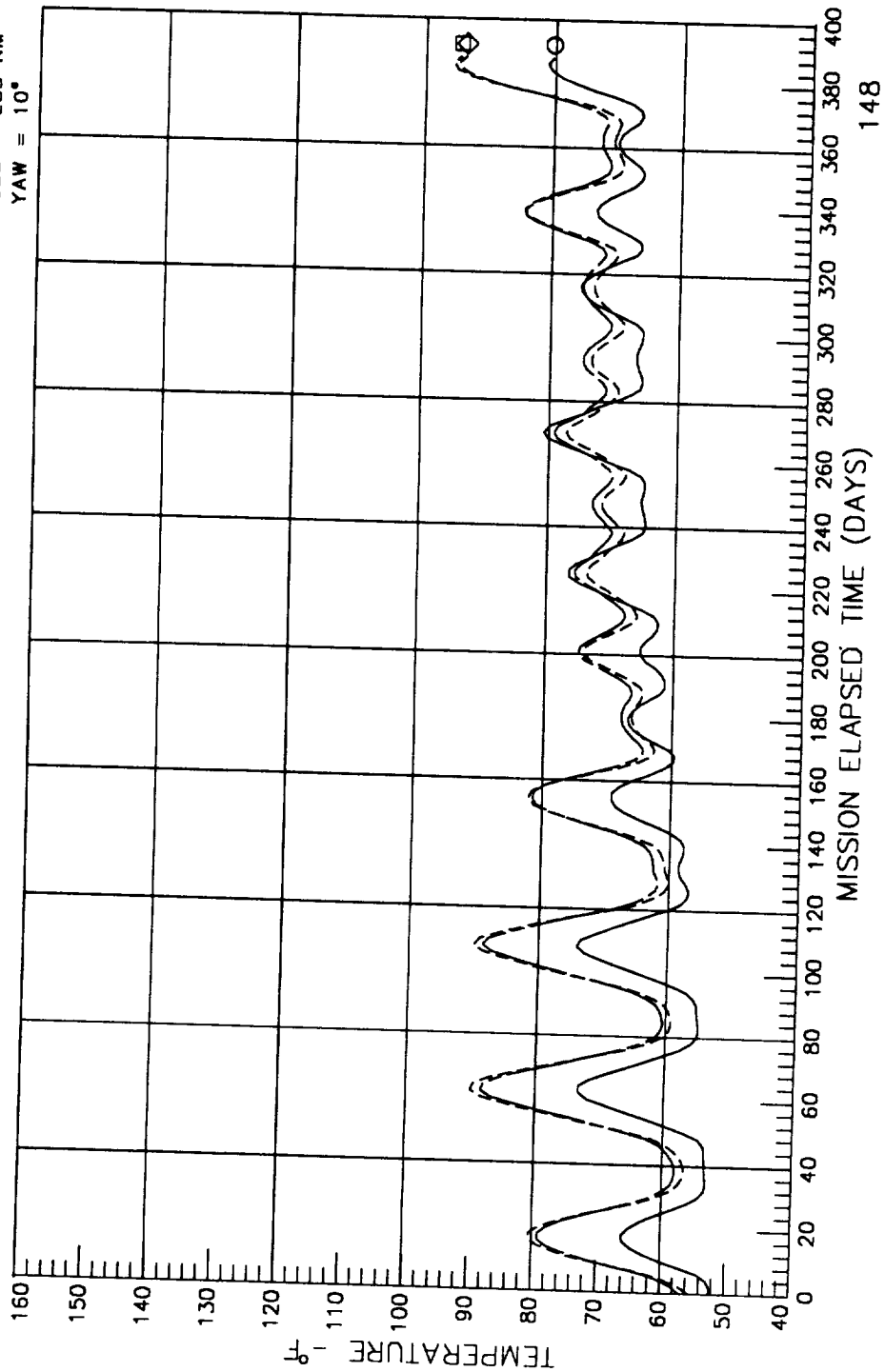
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### STRUCTURE: LOC 612

○ 199 EE CENTER  
 □ 200 EE STRUCTURE  
 ◇ 203 EE STRUCTURE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



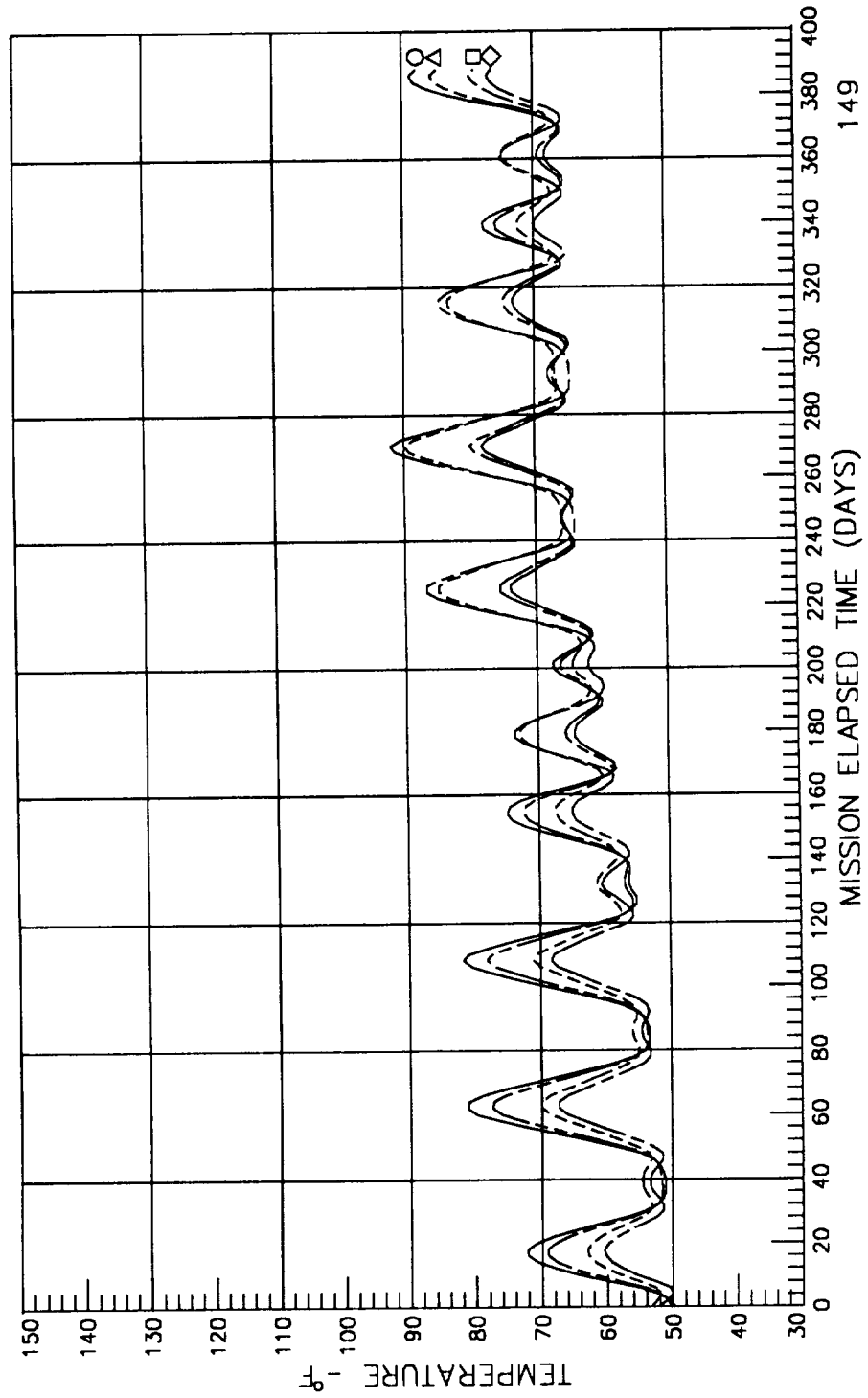
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### CENTER STRUCTURE INTERIOR

○ ——— 217  
 □ - - - 218  
 ◇ ——— 219  
 △ ——— 220

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



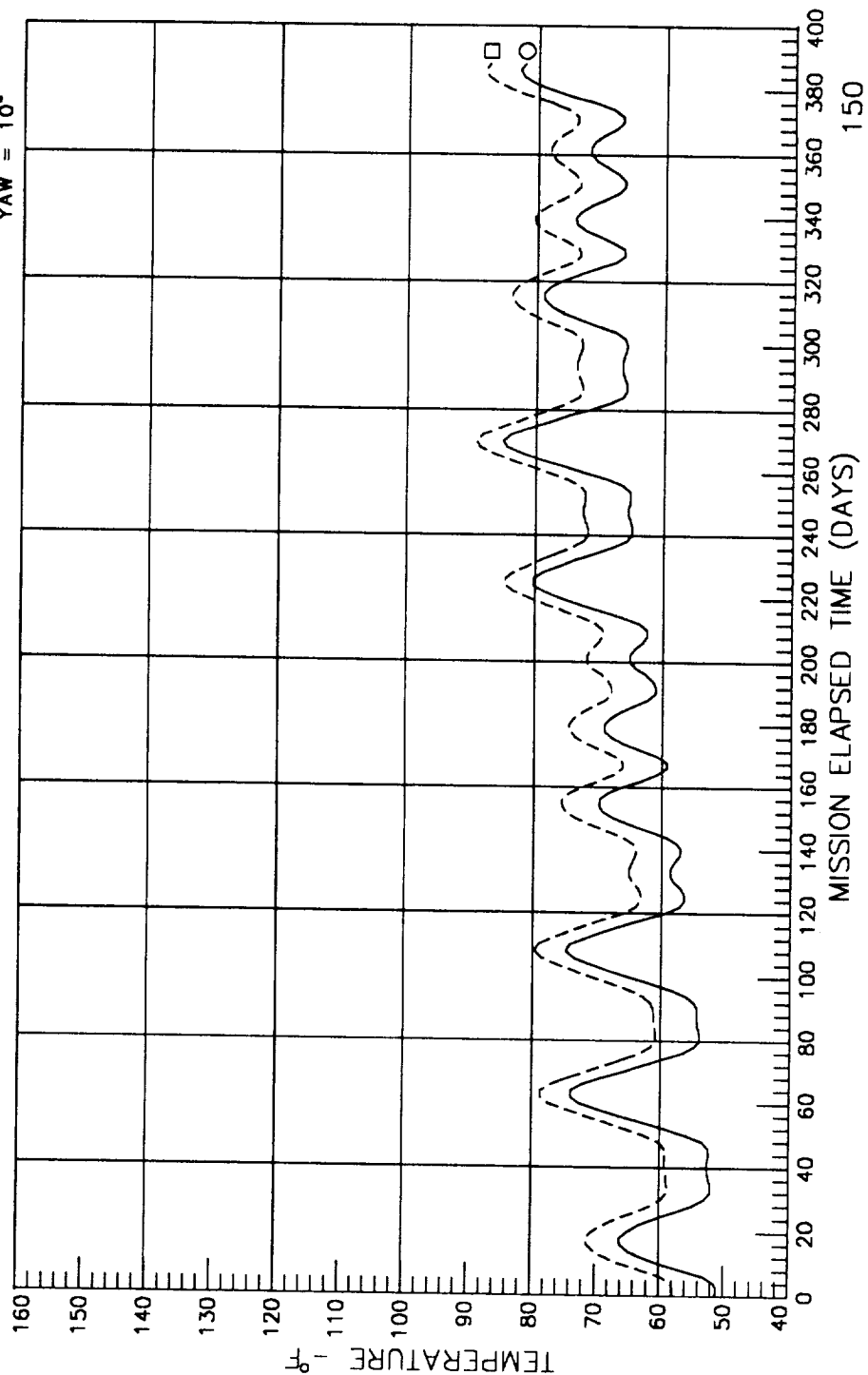
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### CENTER STRUCTURE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ AVERAGE 217-220  
 □ 233 DUMMY NODE



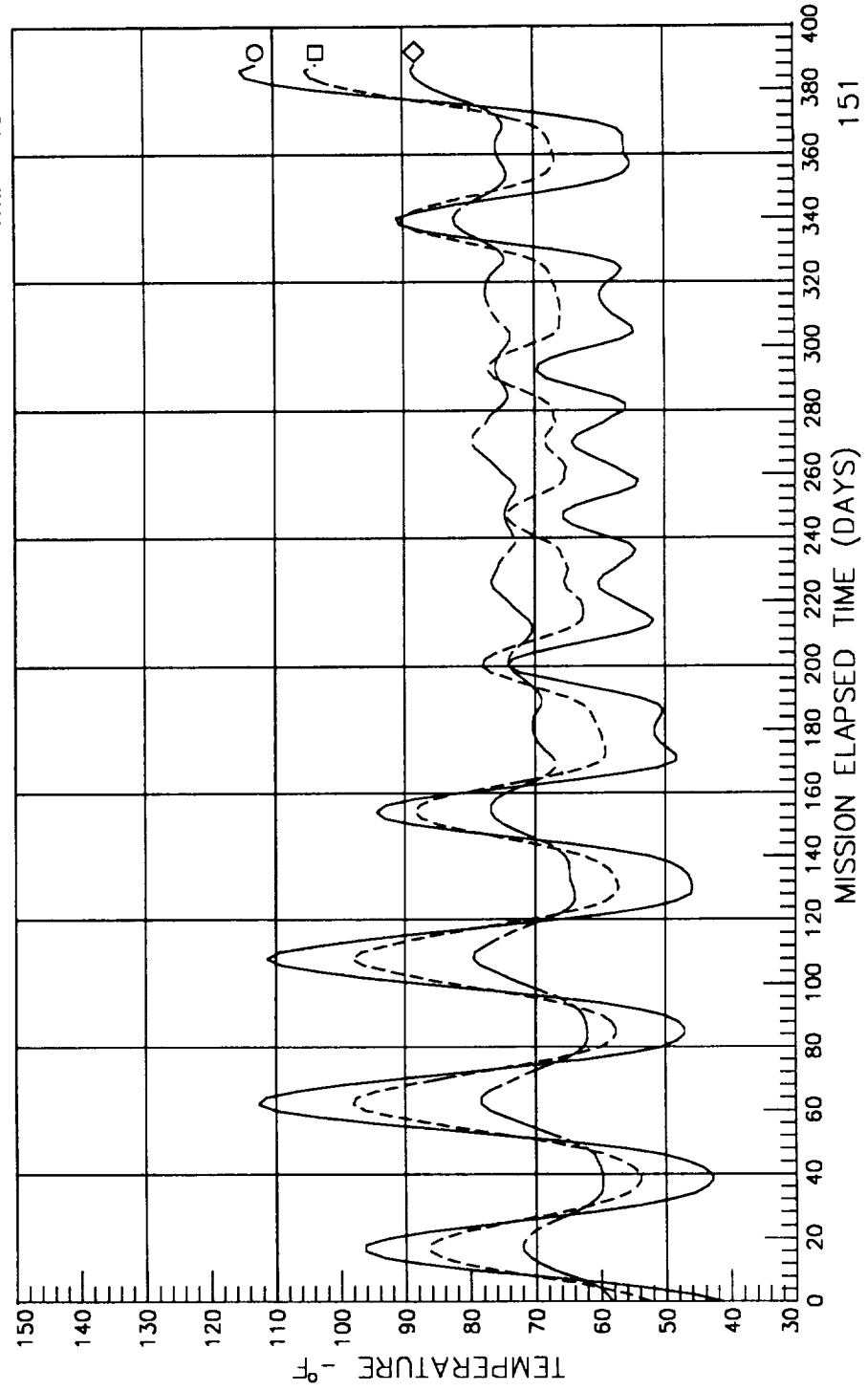
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### CENTER RING ROWS 1-3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 221 ROW 1  
 □ 222 ROW 2  
 ◇ 223 ROW 3



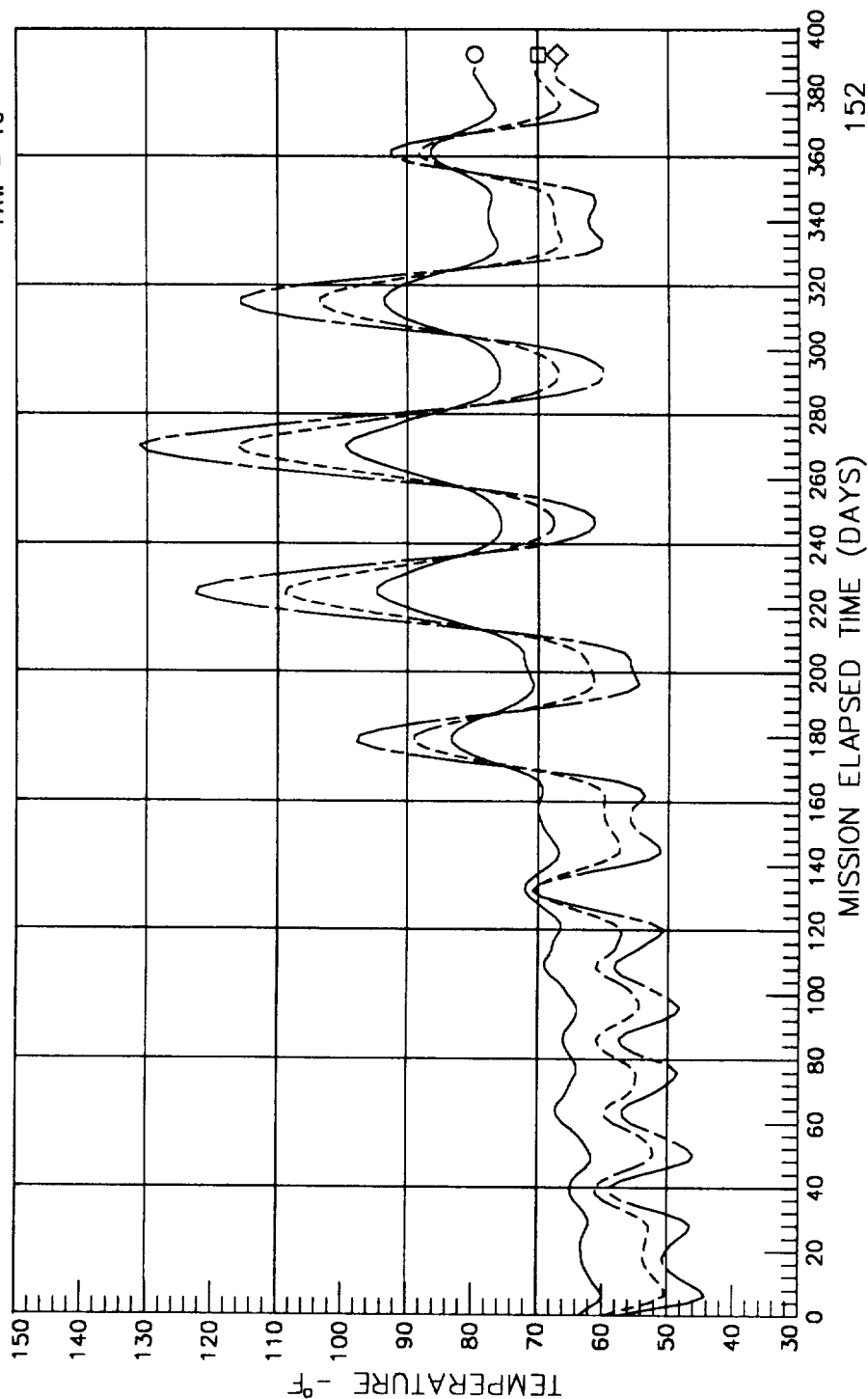
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### CENTER RING ROWS 4-6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 224 ROW 4  
 □ 225 ROW 5  
 ◇ 226 ROW 6





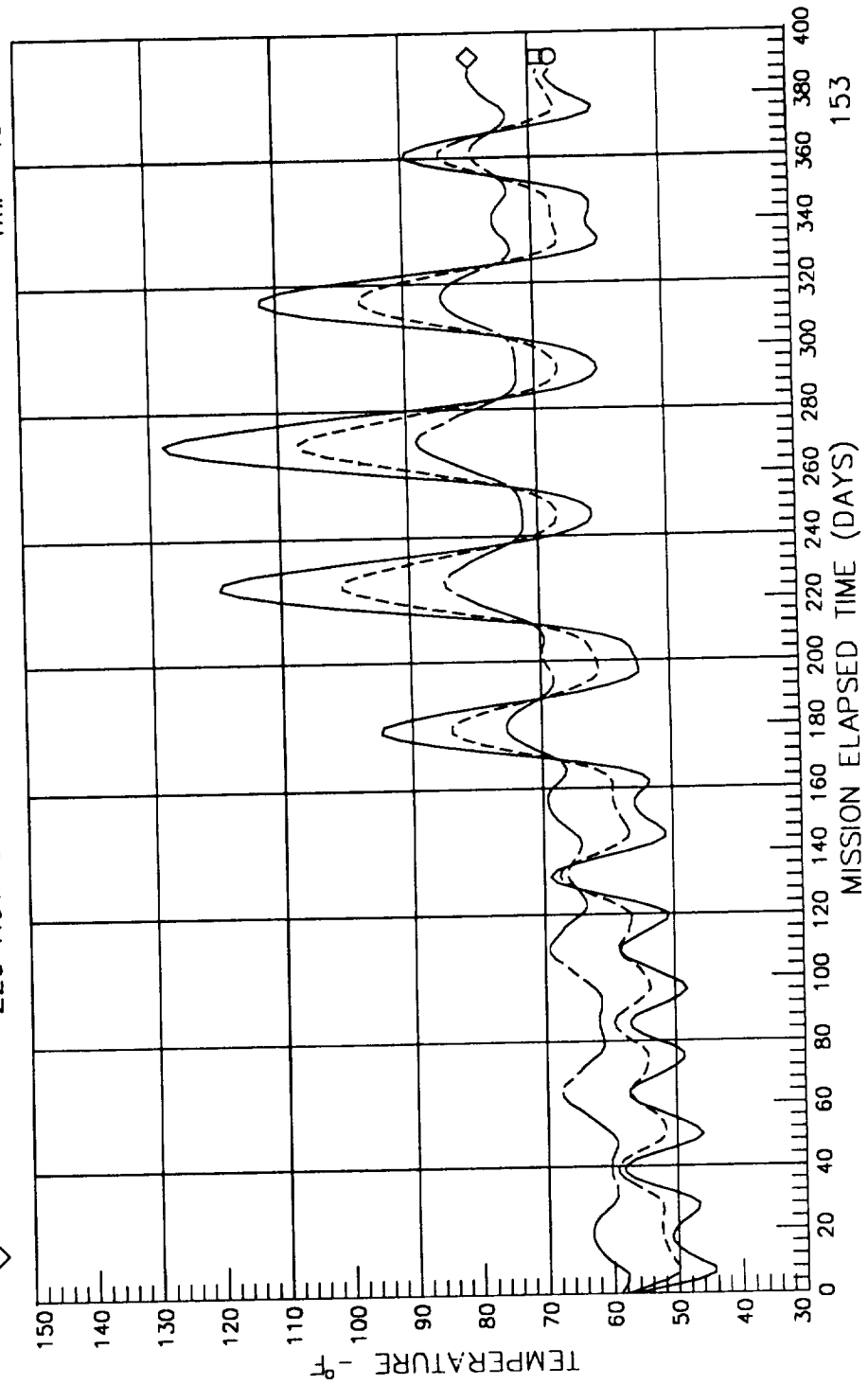
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### CENTER RING ROWS 7-9

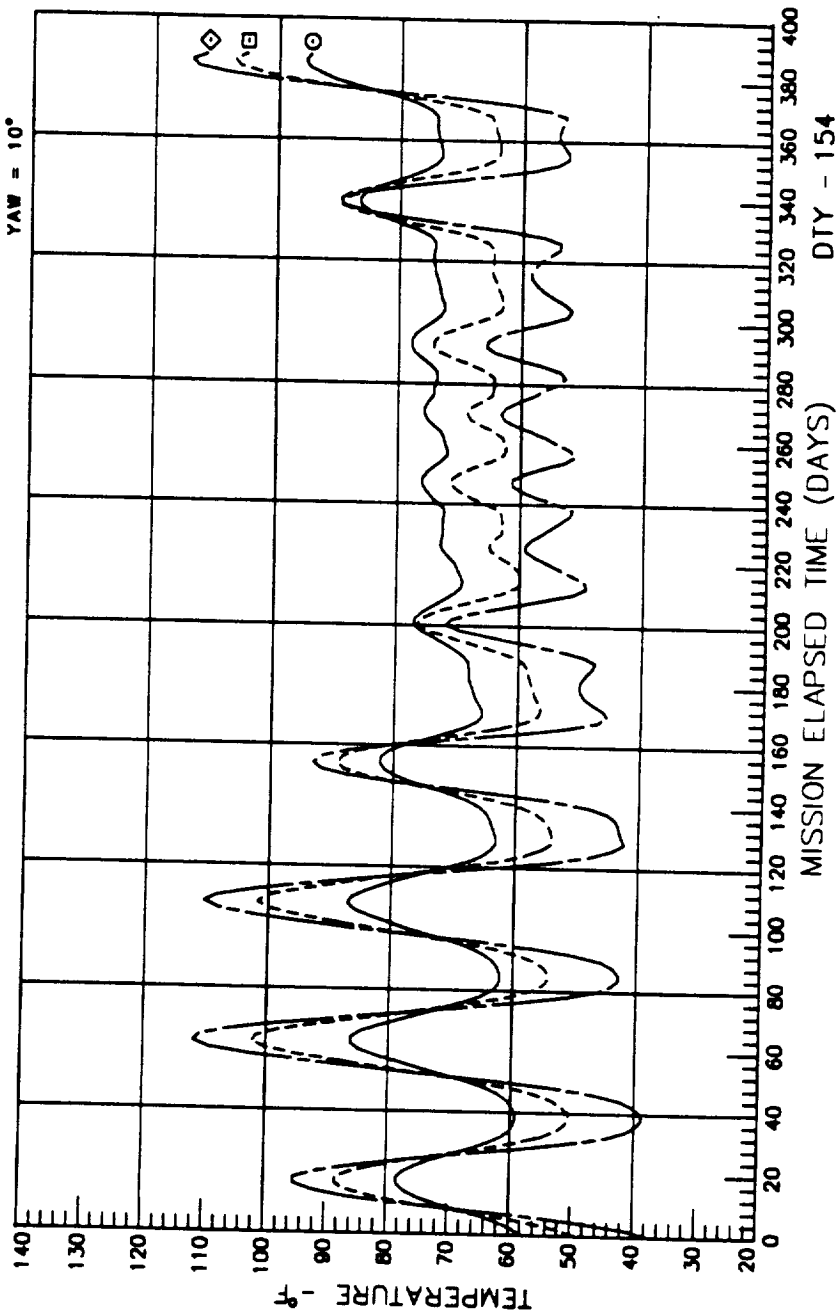
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 227 ROW 7  
 □ 228 ROW 8  
 ◇ 229 ROW 9



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85 CENTER RING ROWS 10-12

○ 230 ROW 10  
 □ 231 ROW 11  
 ◇ 232 ROW 12  
 SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

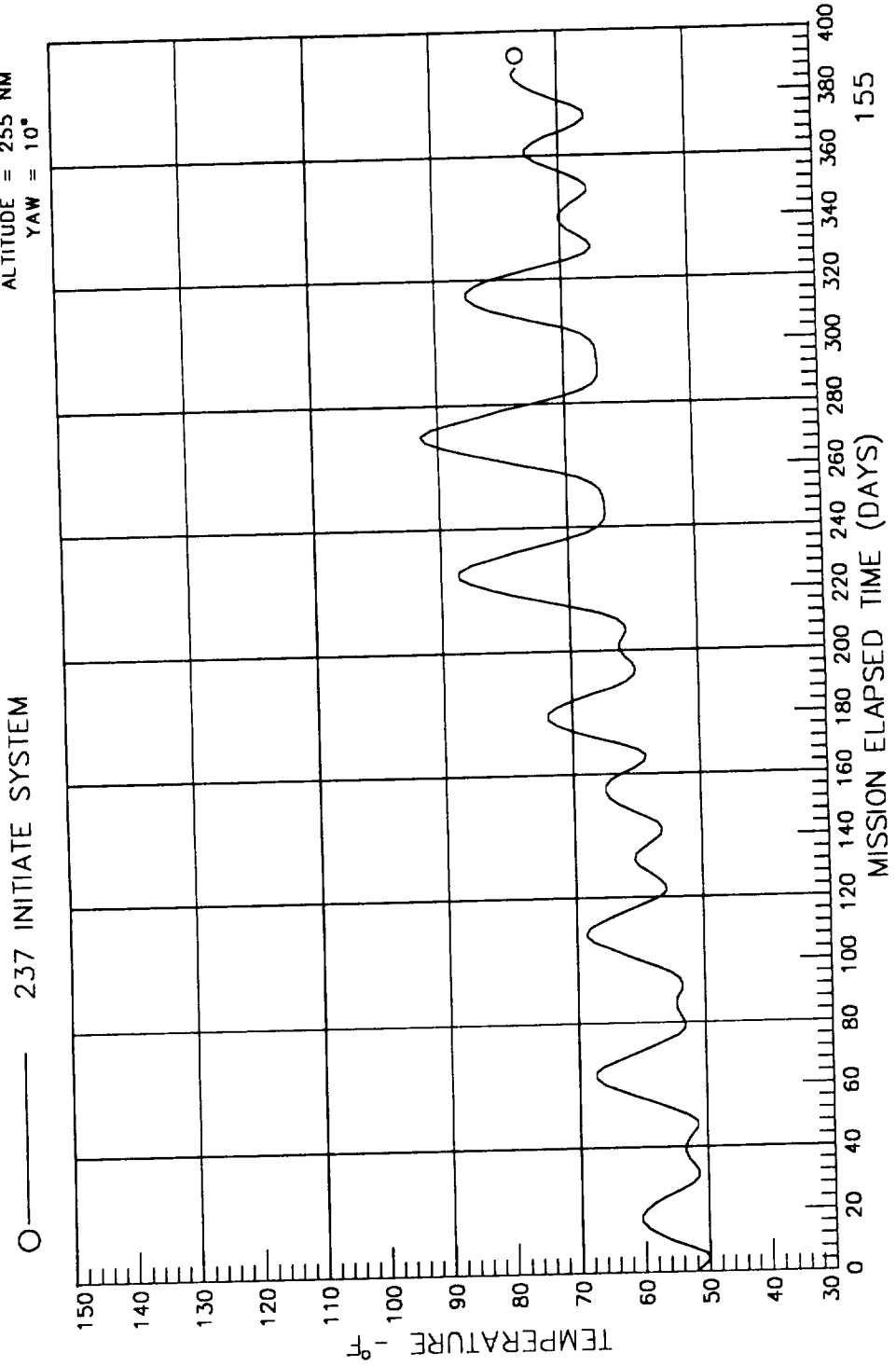


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### INITIATE SYSTEM

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



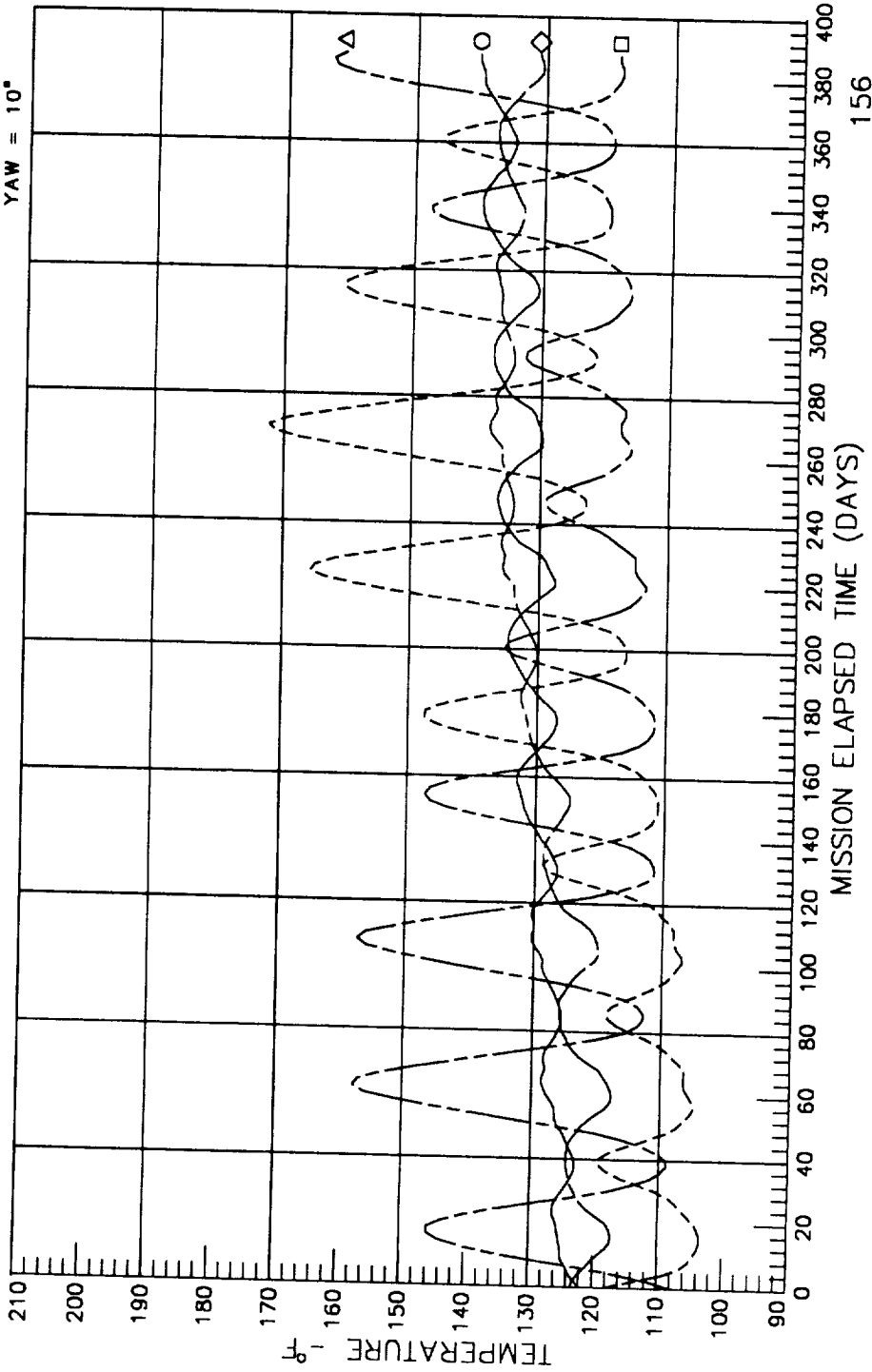
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

EARTH END THERMAL PANEL

- — 204 TRAILING EDGE
- — 205 SOUTH EDGE RW 6
- ◇ — 206 LEADING EDGE
- △ — 207 NORTH EDGE RW 12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

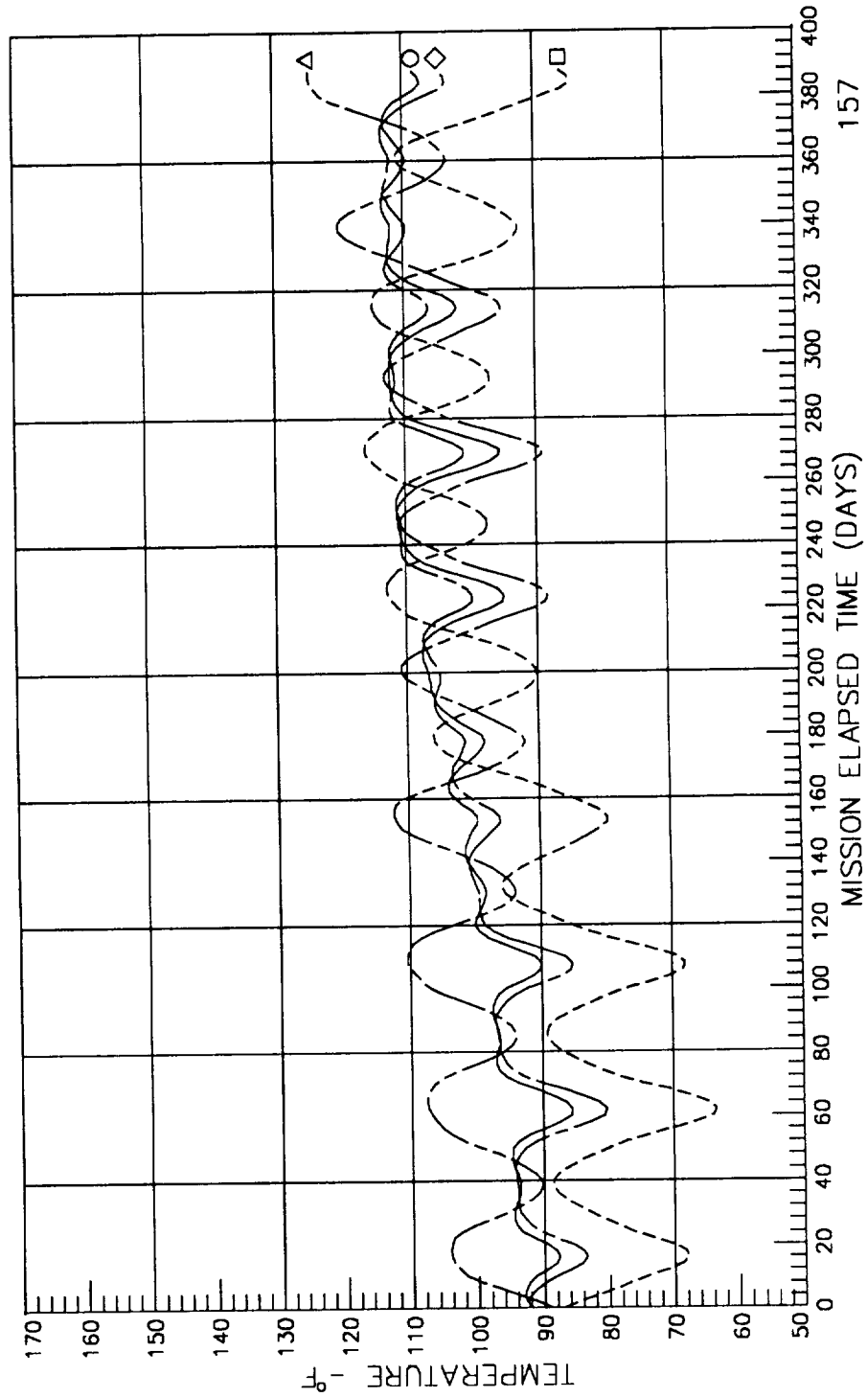


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

SPACE END THERMAL PANEL

○	213 TRAILING EDGE	SOLAR CONSTANT = 434 BTU/HR-FT <sup>2</sup>
□	214 SOUTH EDGE RW 6	PLANETARY FLUX = 77 BTU/HR-FT <sup>2</sup>
◇	215 LEADING EDGE	ALBEDO = 31%
△	216 NORHT EDGE RW 12	ALTITUDE = 255 NM
		YAW = 10°



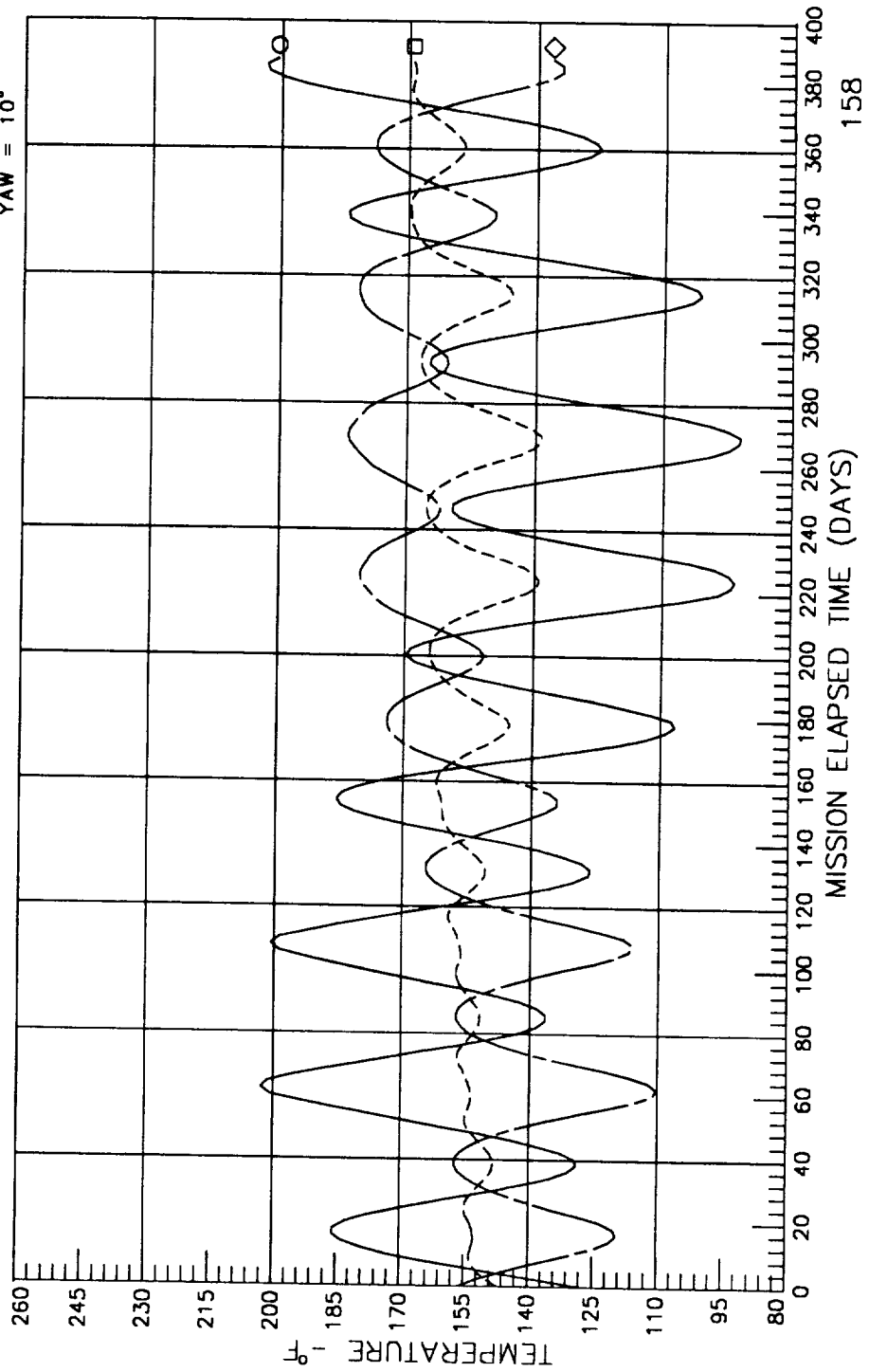
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### EARTH END THERMAL PANEL SIDE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 295 ROW 2  
 □ - - 296 ROW 3  
 ◇ — 297 ROW 4



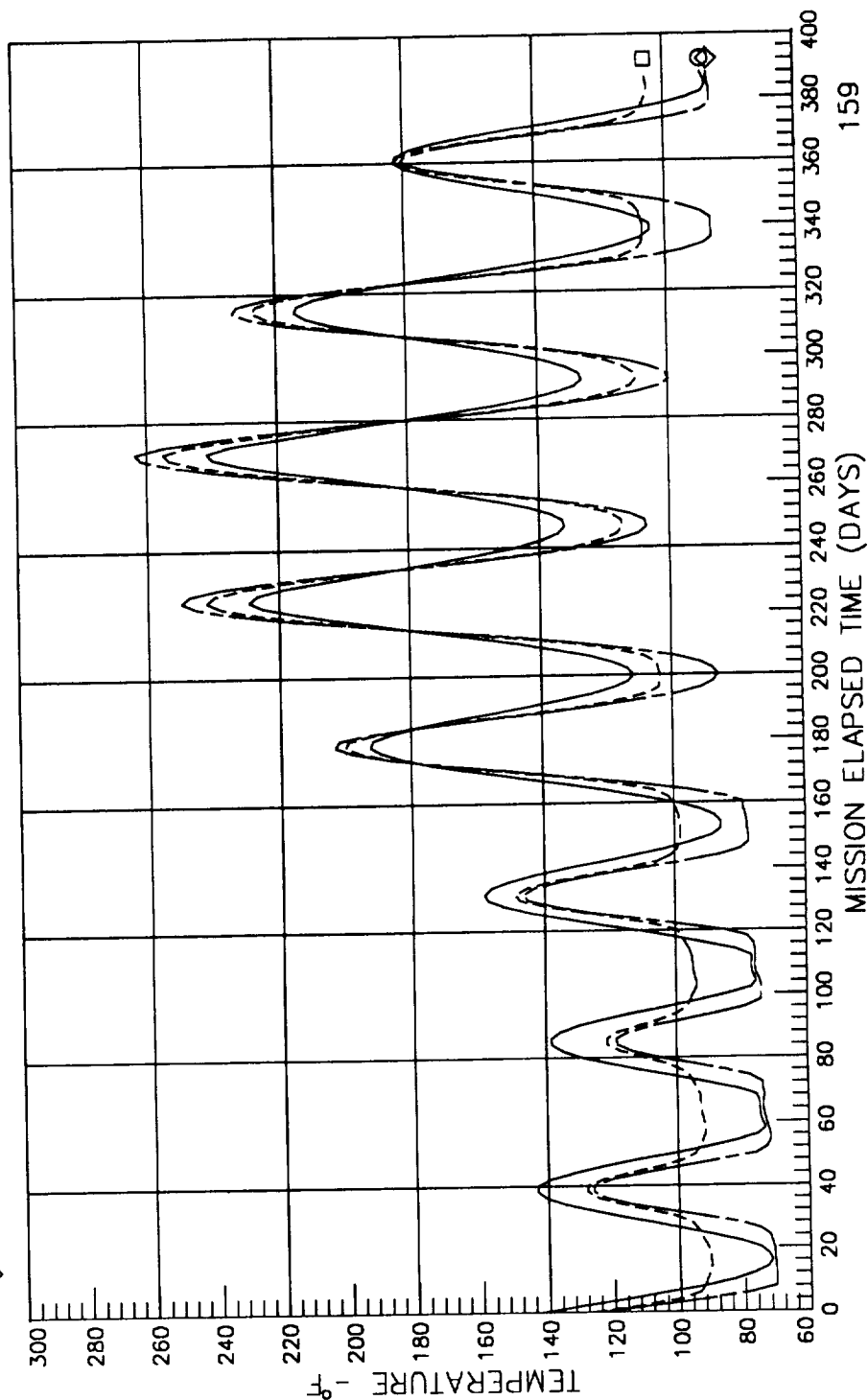
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### EARTH END THERMAL PANEL SIDE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 298 ROW 5  
 □ 299 ROW 6  
 ◇ 300 ROW 7



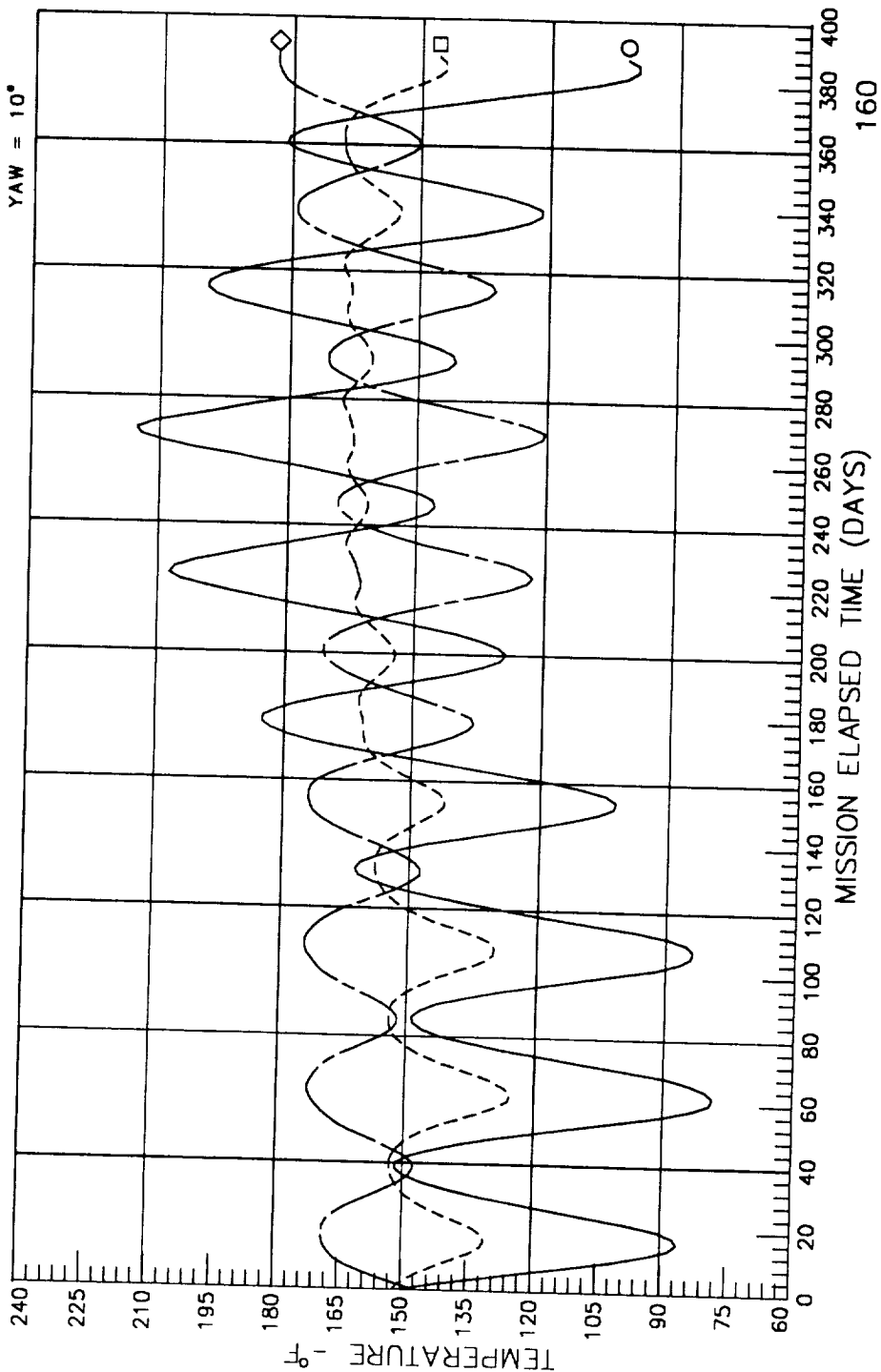
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### EARTH END THERMAL PANEL SIDE

○ 301 ROW 8  
 □ 302 ROW 9  
 ◇ 303 ROW 10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°





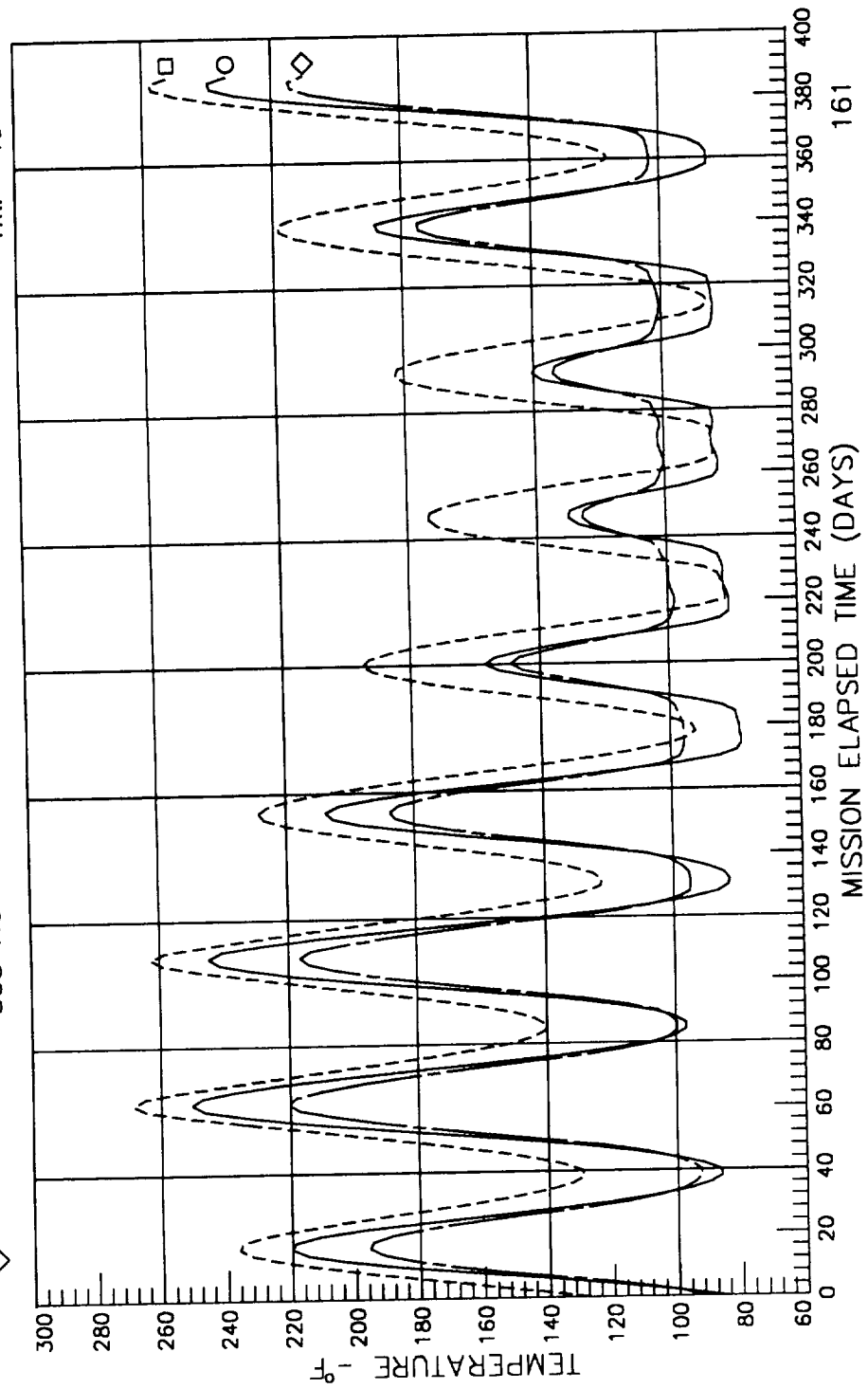
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### EARTH END THERMAL PANEL SIDE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 294 ROW 1  
 □ 304 ROW 11  
 ◇ 305 ROW 12



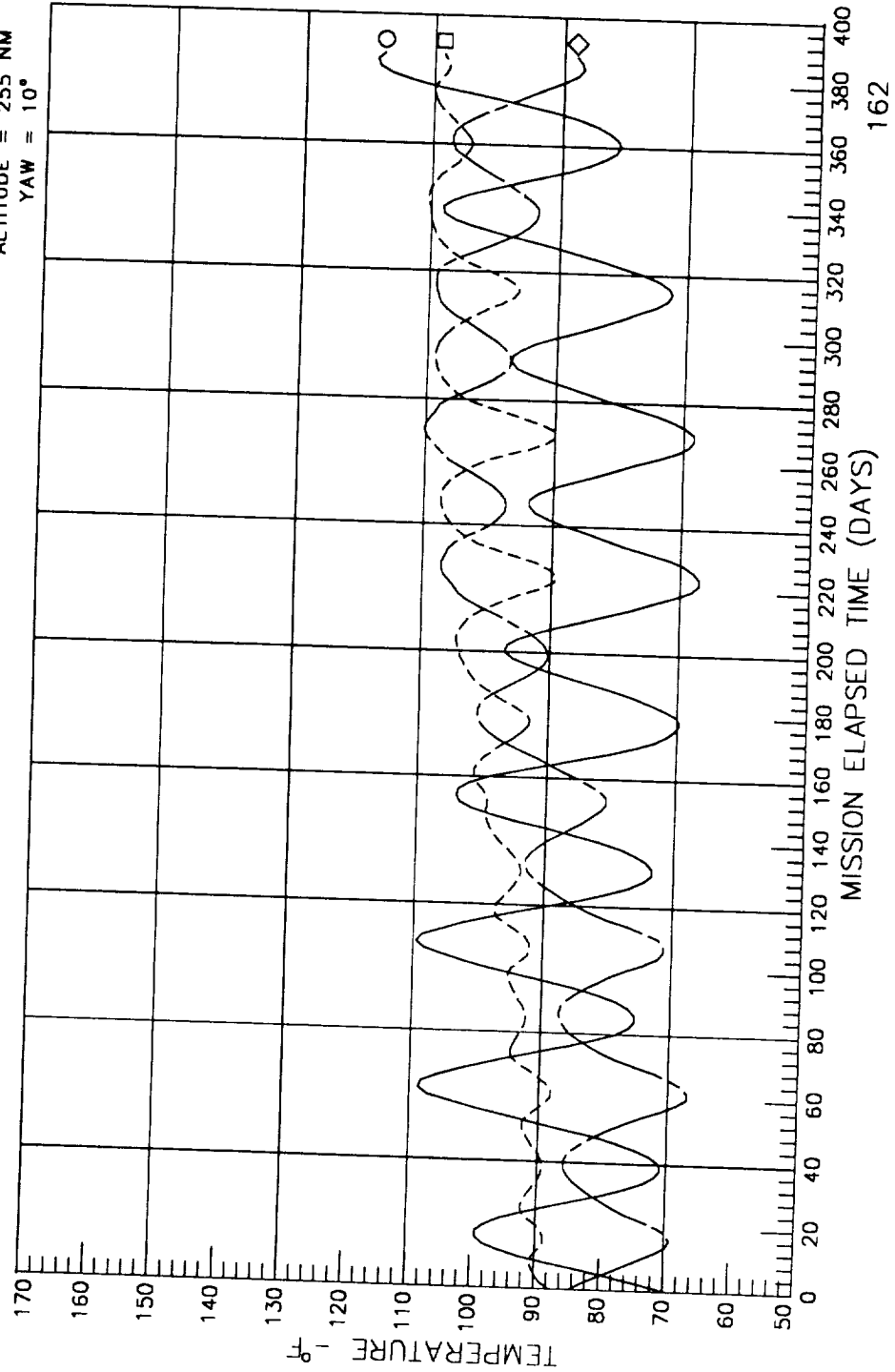
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### SPACE END THERMAL PANEL SIDE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 307 ROW 2  
 □ 308 ROW 3  
 ◇ 309 ROW 4



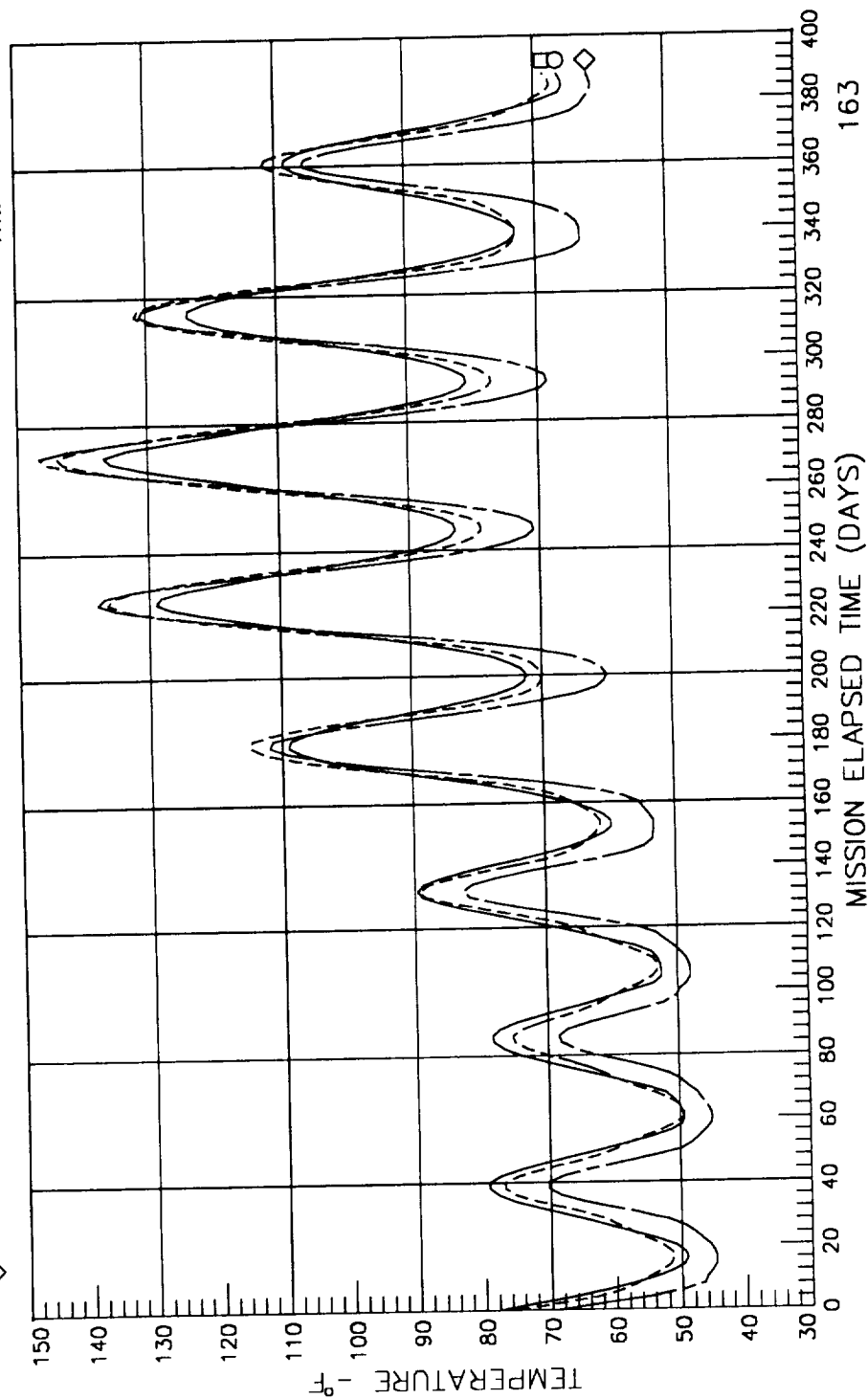
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### SPACE END THERMAL PANEL SIDE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ 310 ROW 5  
 □ 311 ROW 6  
 ◇ 312 ROW 7



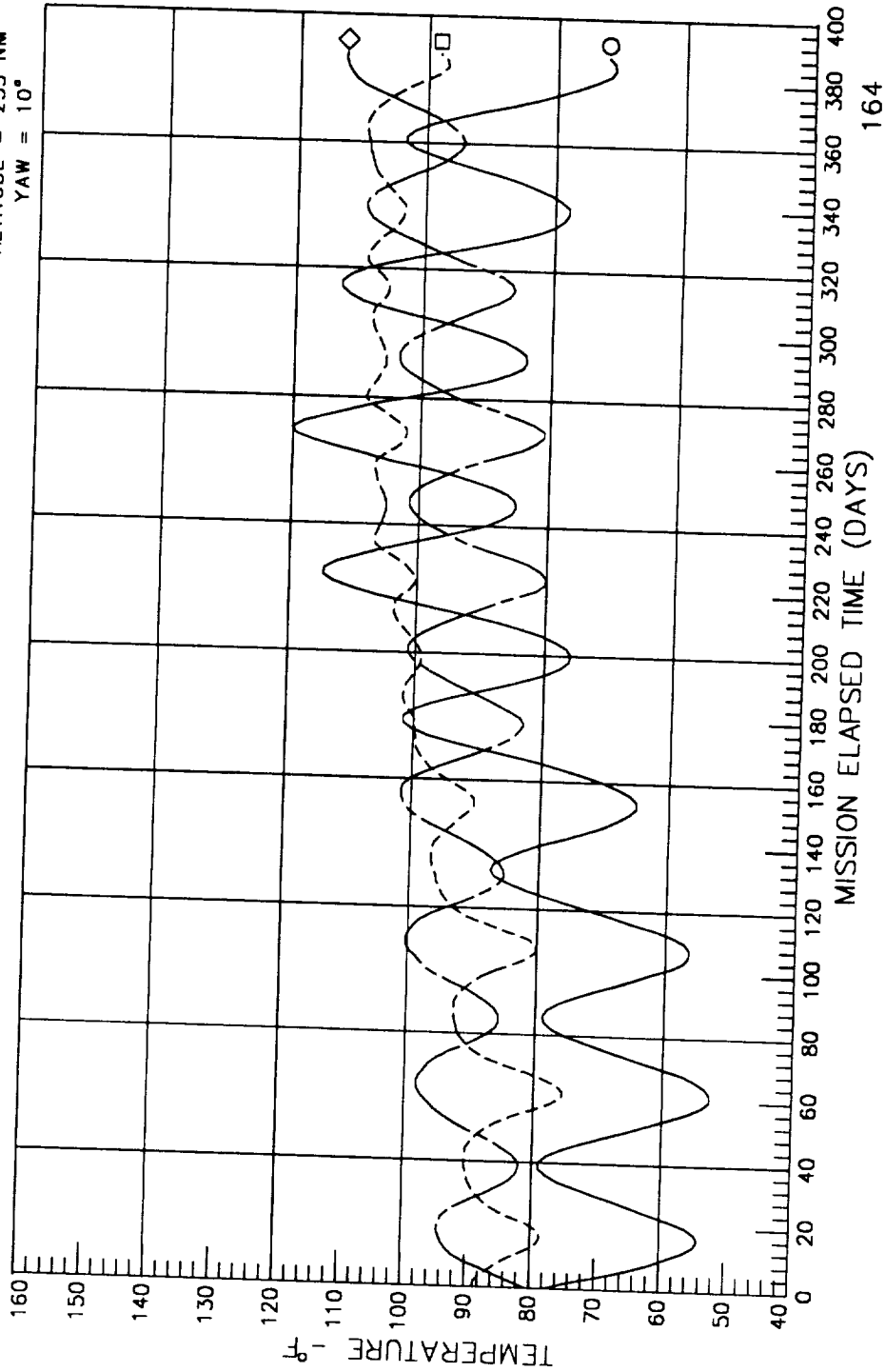
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### SPACE END THERMAL PANEL SIDE

○ — 313 ROW 8  
 □ - - 314 ROW 9  
 ◇ — 315 ROW 10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

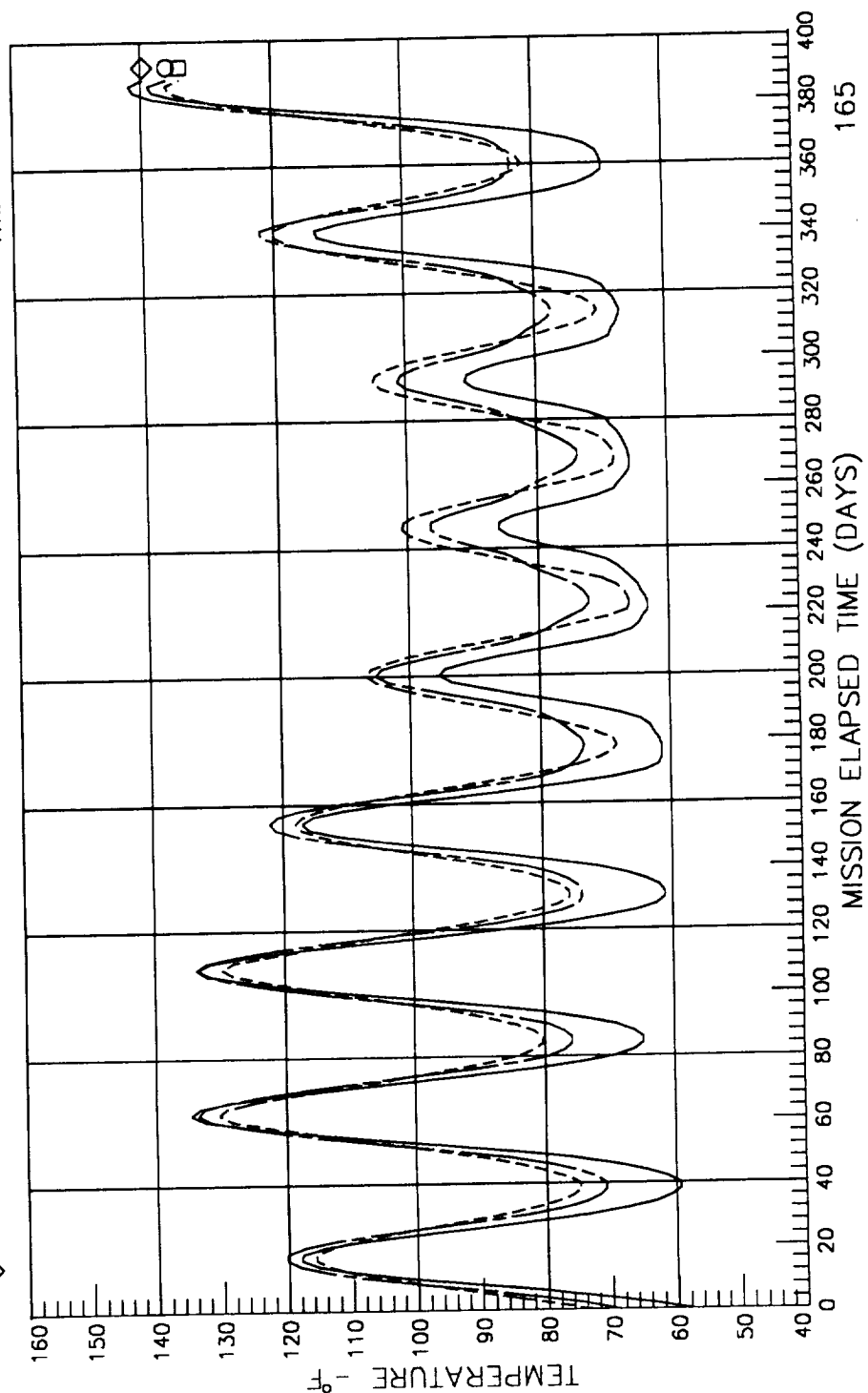
## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### SPACE END THERMAL PANEL SIDE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

306 ROW 1  
 316 ROW 11  
 317 ROW 12

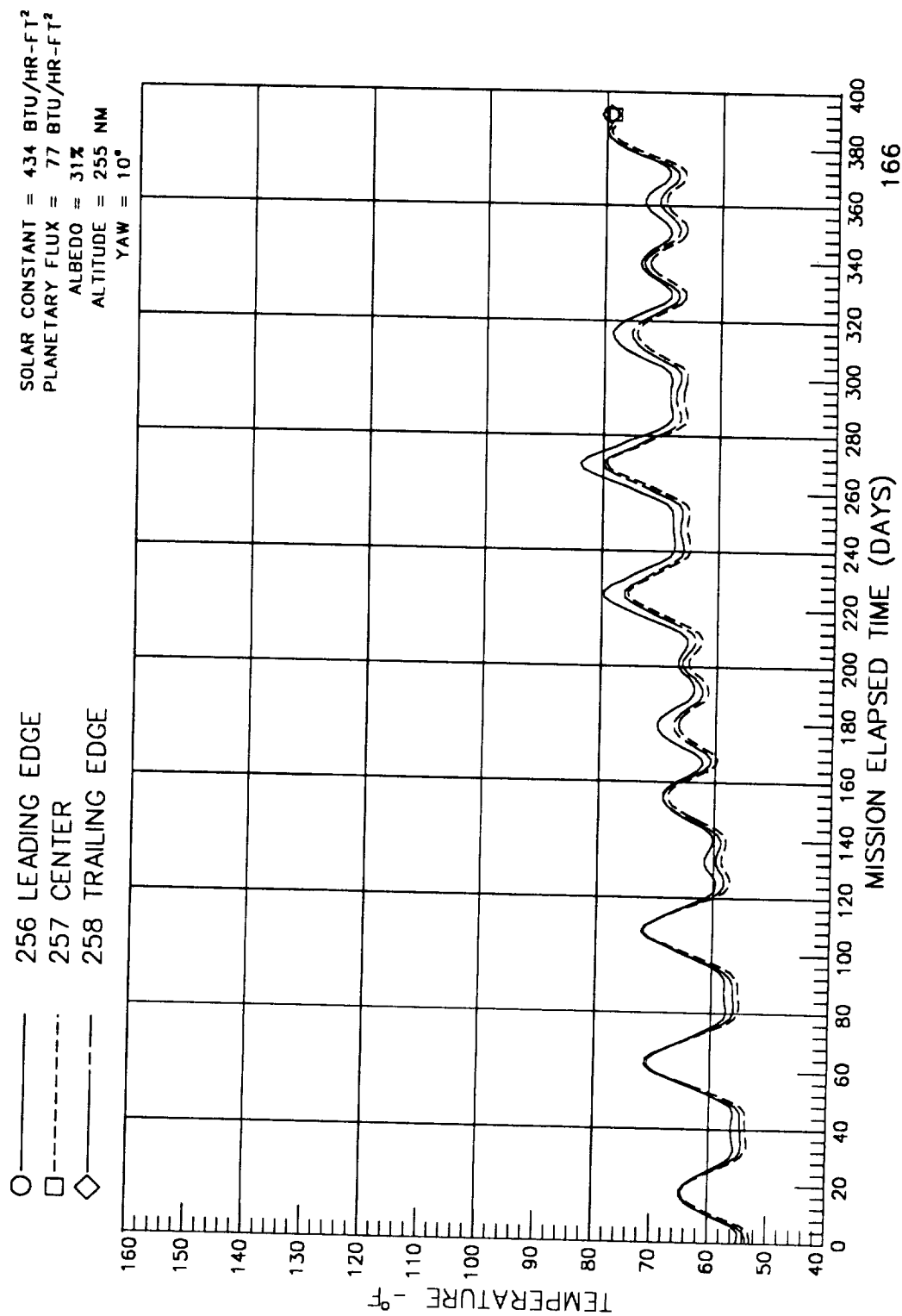
○  
 □  
 ◇



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### EARTH DUMMY COVER PLATES

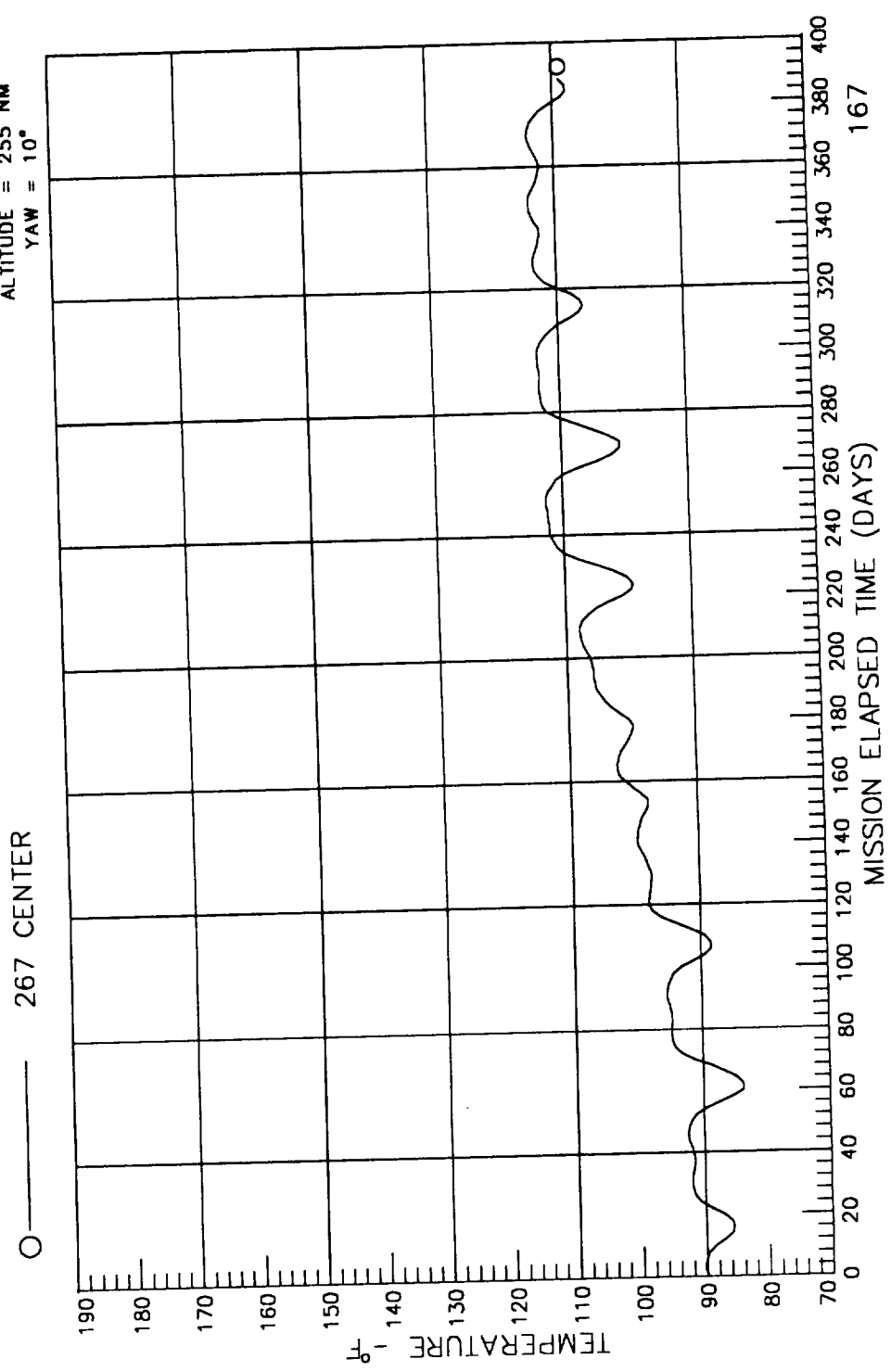


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### SPACE DUMMY COVER PLATE CENTER

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



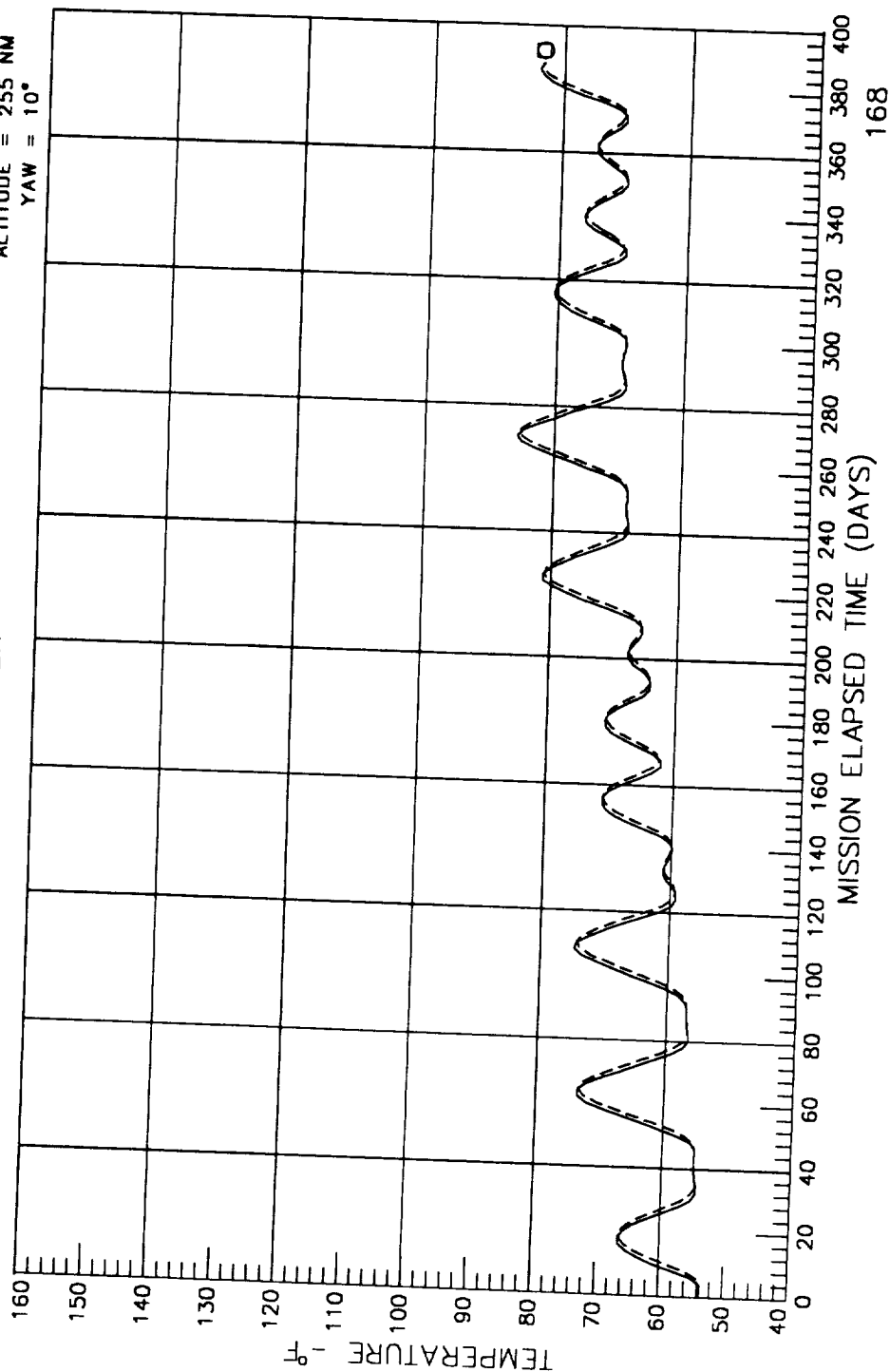
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### MAGNETIC DAMPER & SHROUD

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 234 DAMPER DOME  
 □ - - - 235 MAGNETIC DAMPER



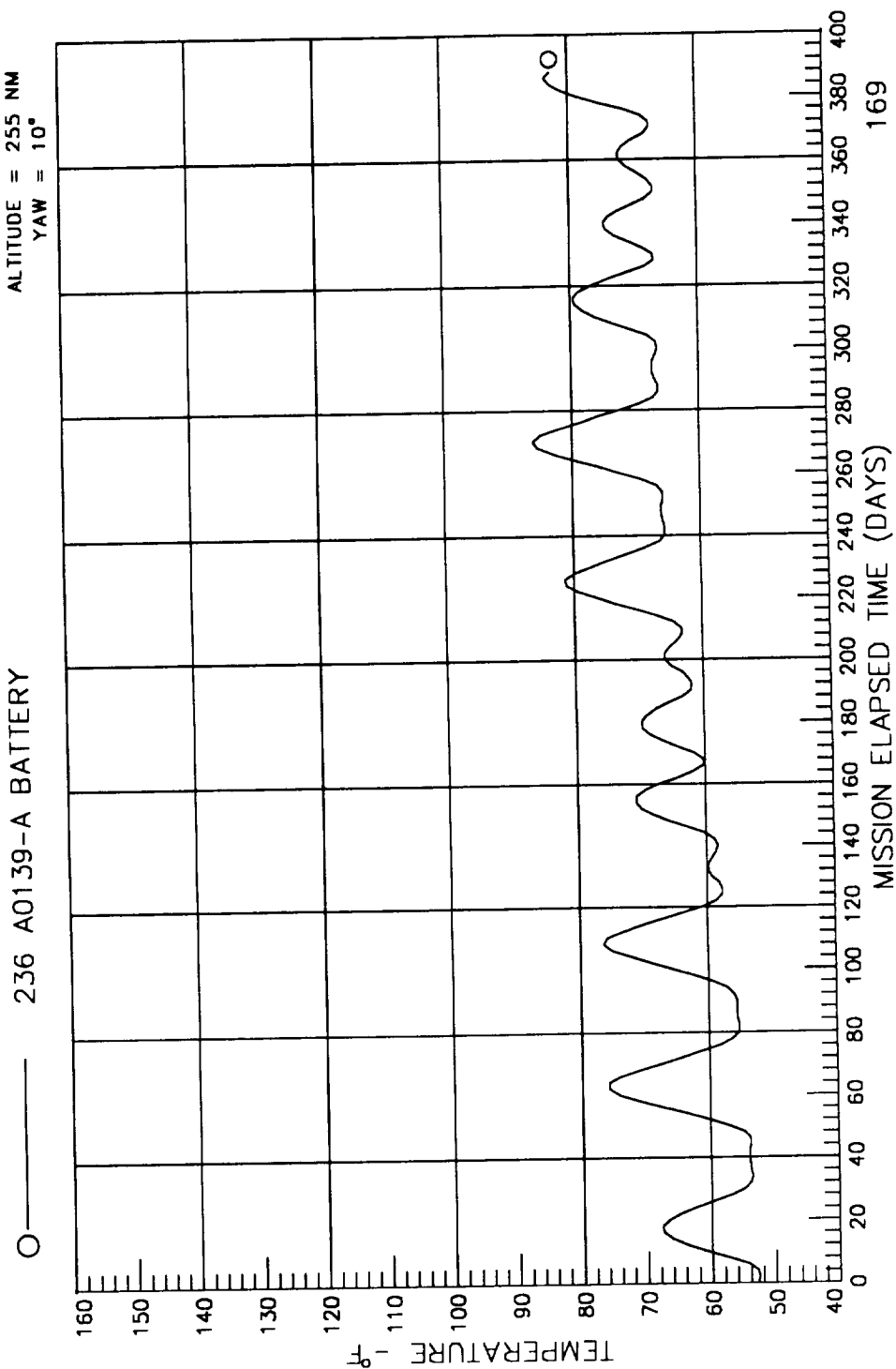


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### BATTERIES FOR A0139-A

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

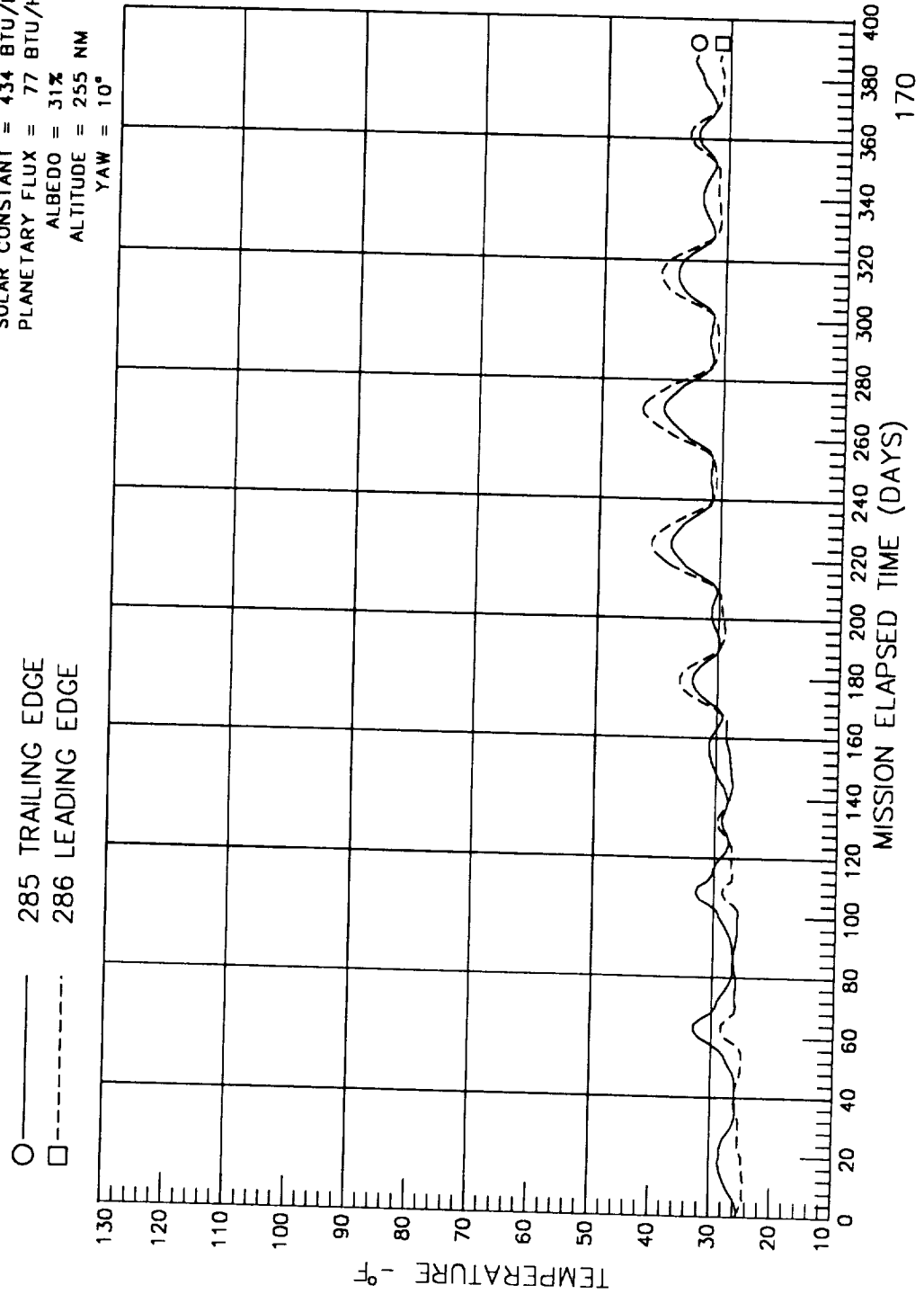


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### MAIN SCUFF PLATES

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°



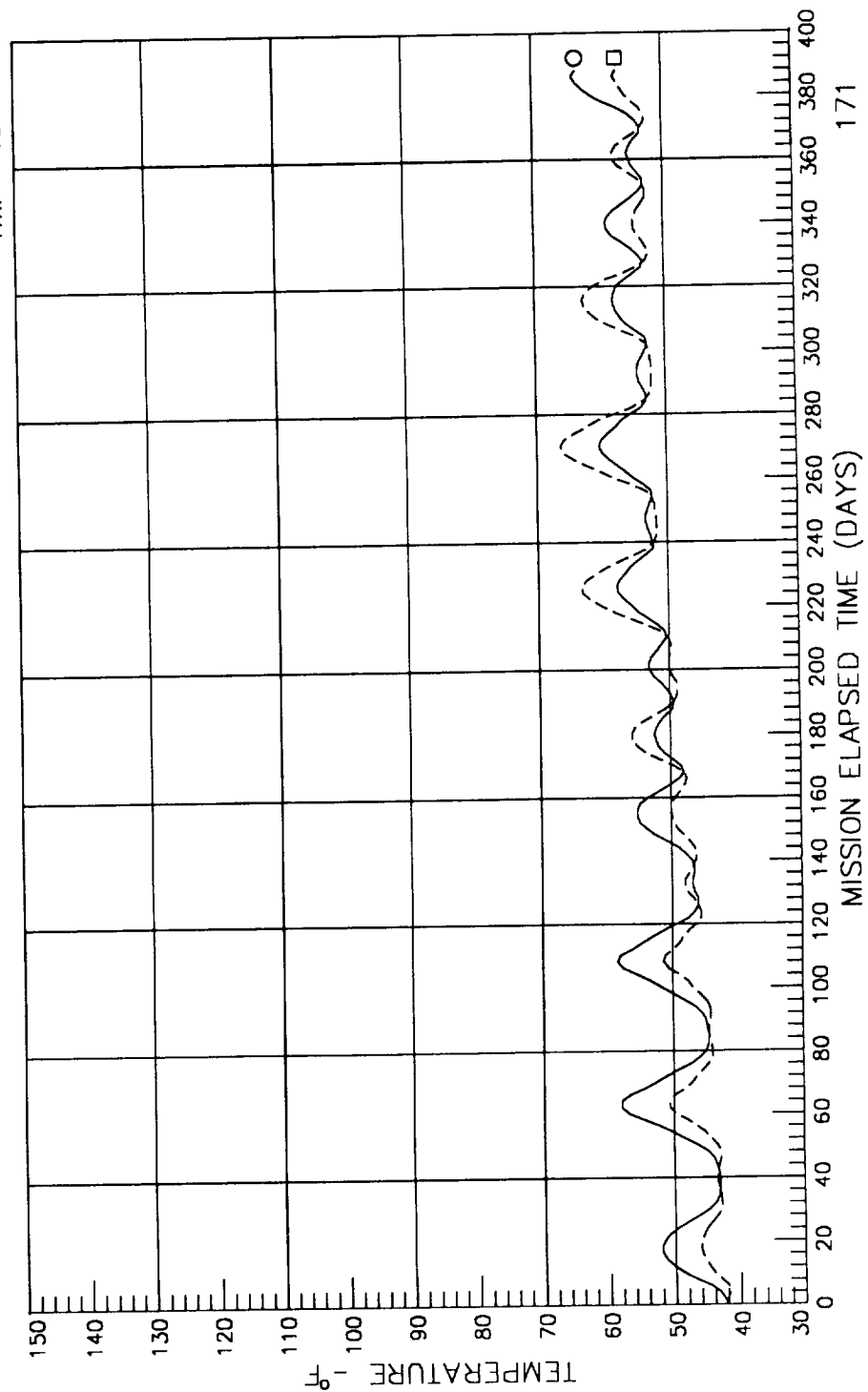
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### MAIN TRUNNION PINS

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 238 TRAILING EDGE  
 □ - - - 239 LEADING EDGE



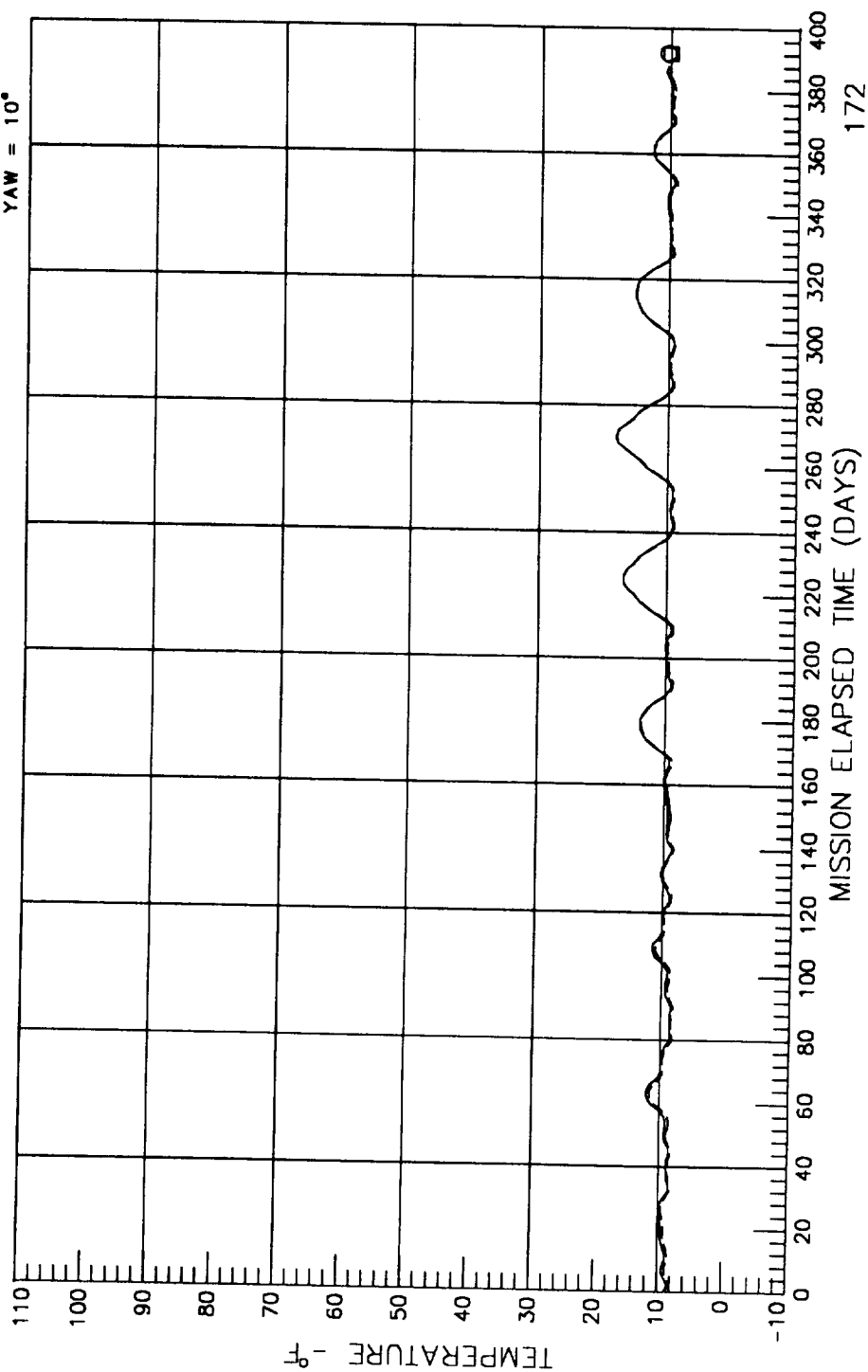
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### END SCUFF PLATES

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ ——— 289 TRAILING EDGE  
 □ - - - 292 LEADING EDGE



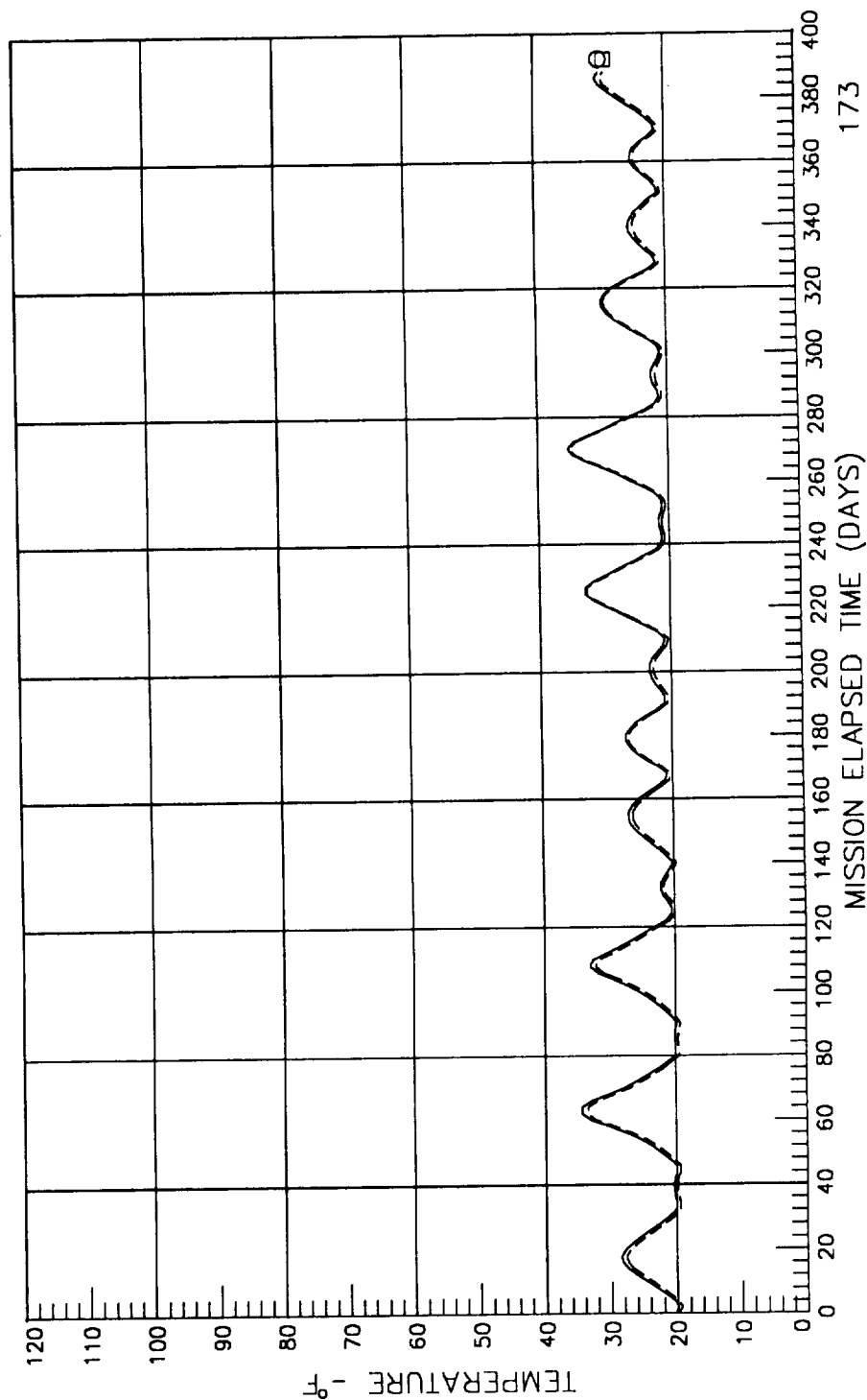
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### END TRUNNION PIN

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 290 TRAILING EDGE  
 □ - - - 293 LEADING EDGE



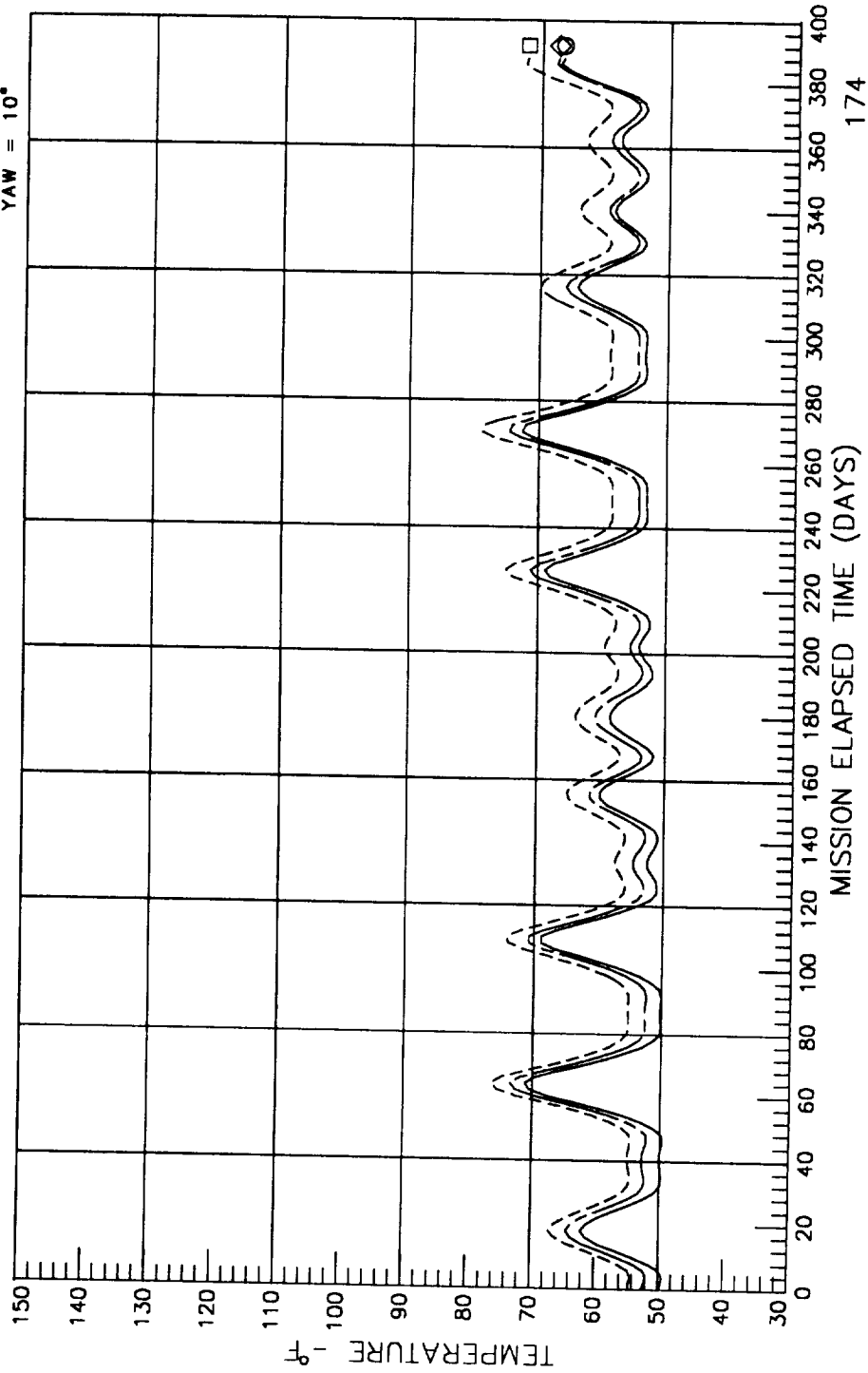
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### END SUPPORT BEAM

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

○ — 287 TRAILING EDGE  
 □ - - 288 CENTER BAR  
 ◇ — 291 LEADING EDGE

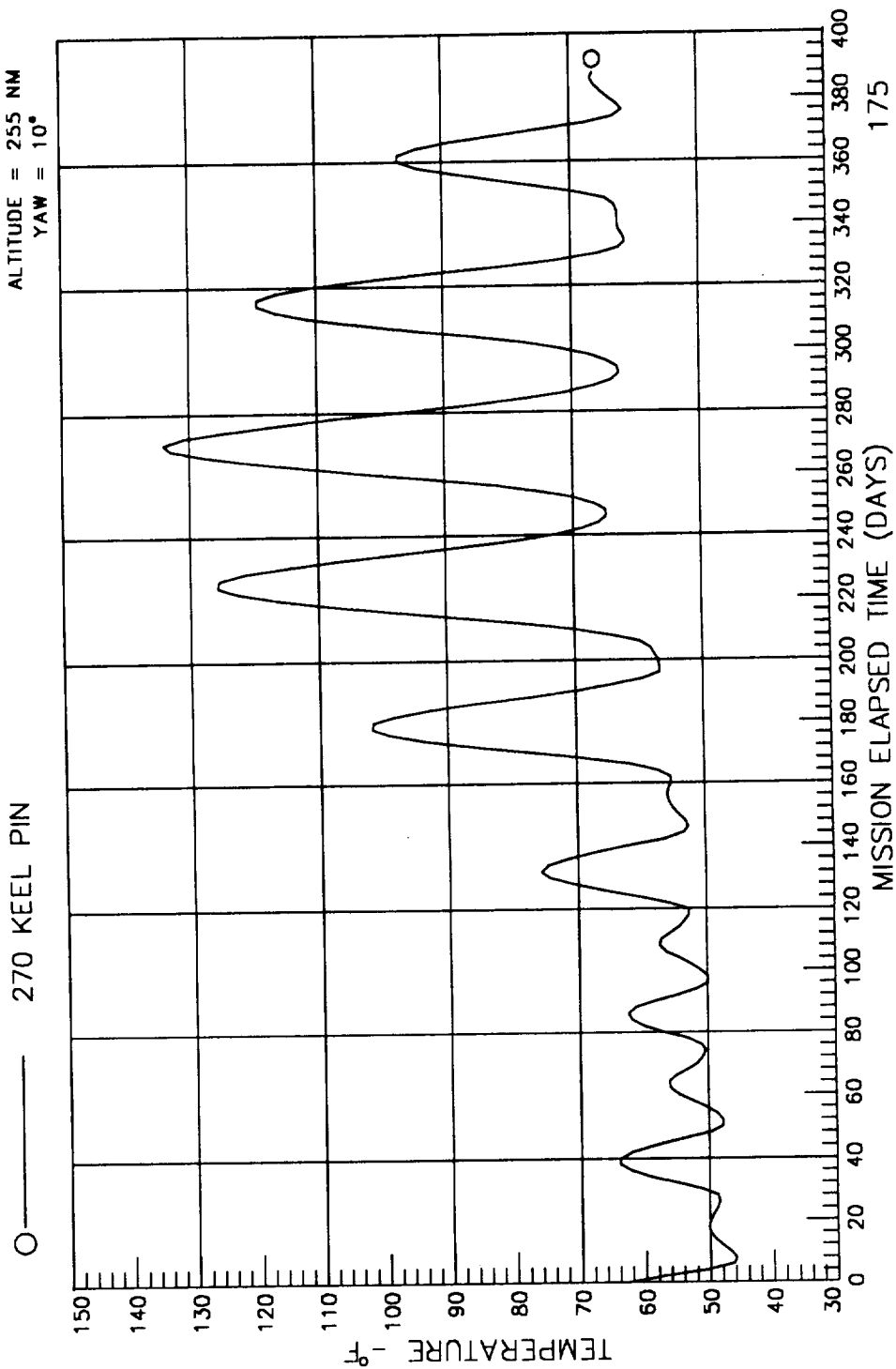


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### KEEL

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

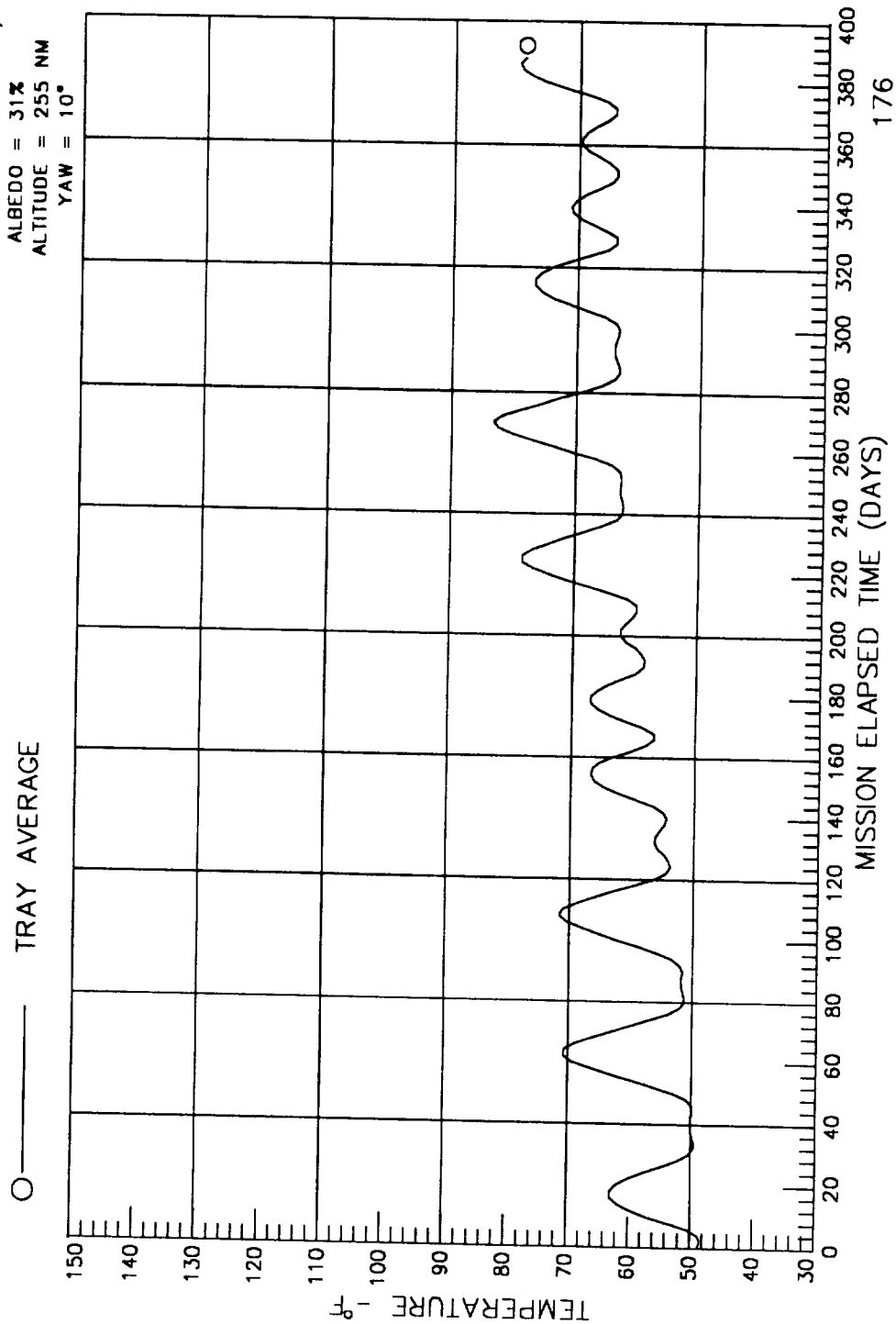


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### AVERAGE FOR TRAYS 1 - 72

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°





# LONG DURATION EXPOSURE FACILITY

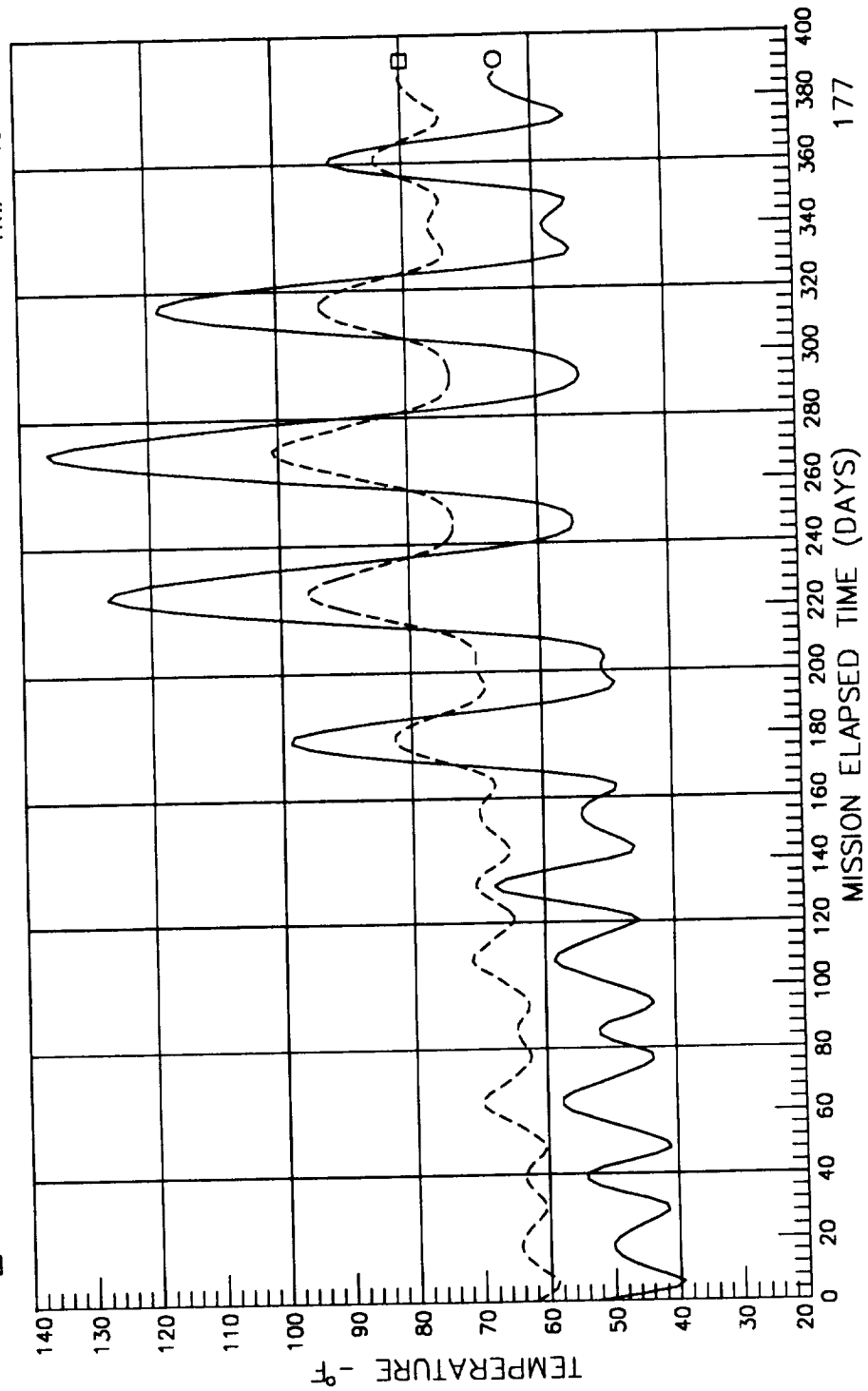
## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### T/C NODES EE & LG 6-7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

326 LONGERON AT B6  
 327 EARTH END AT 202

○ ——— 326 LONGERON AT B6  
 □ - - - - 327 EARTH END AT 202

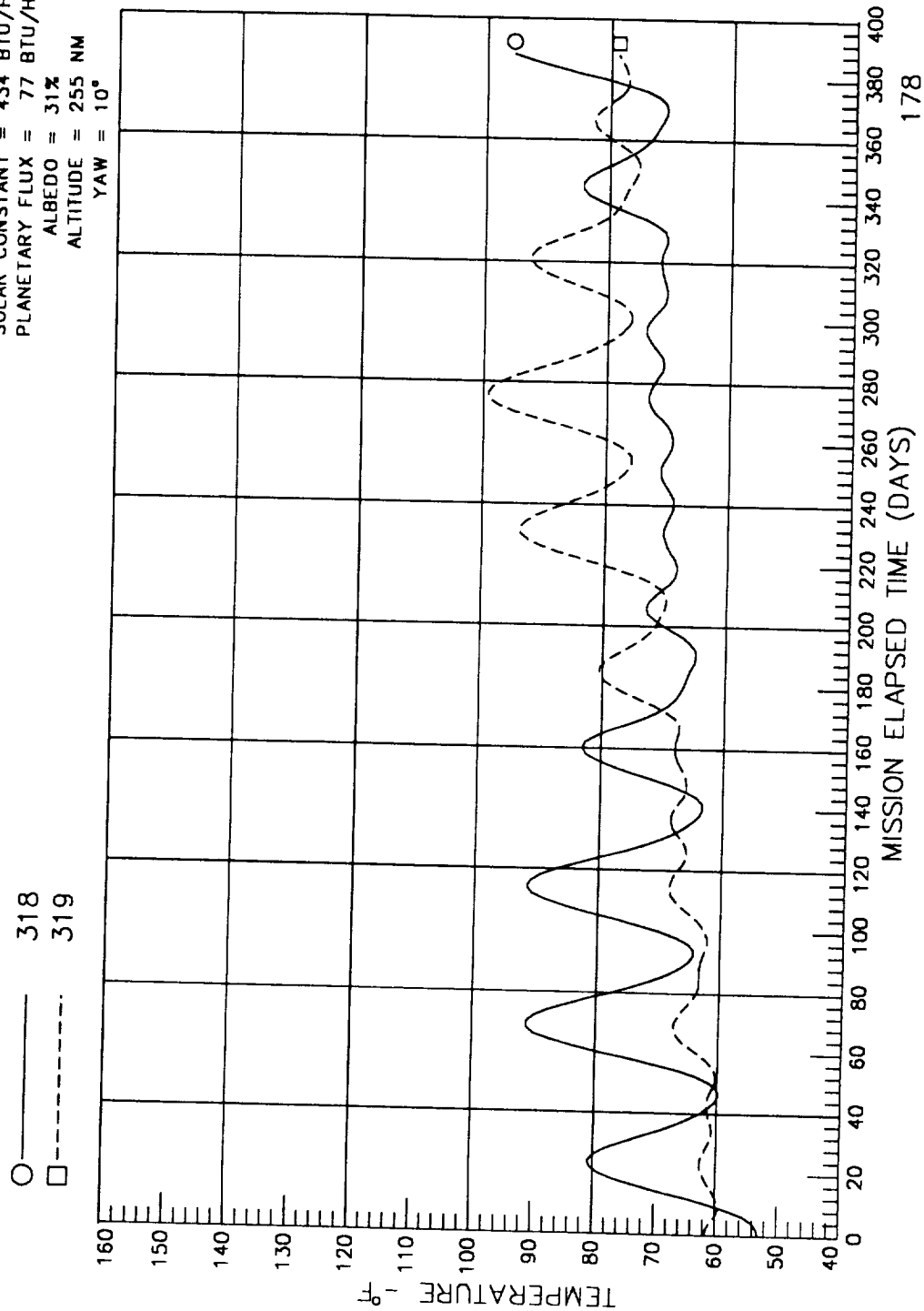


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### INTERIOR STRUTS

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

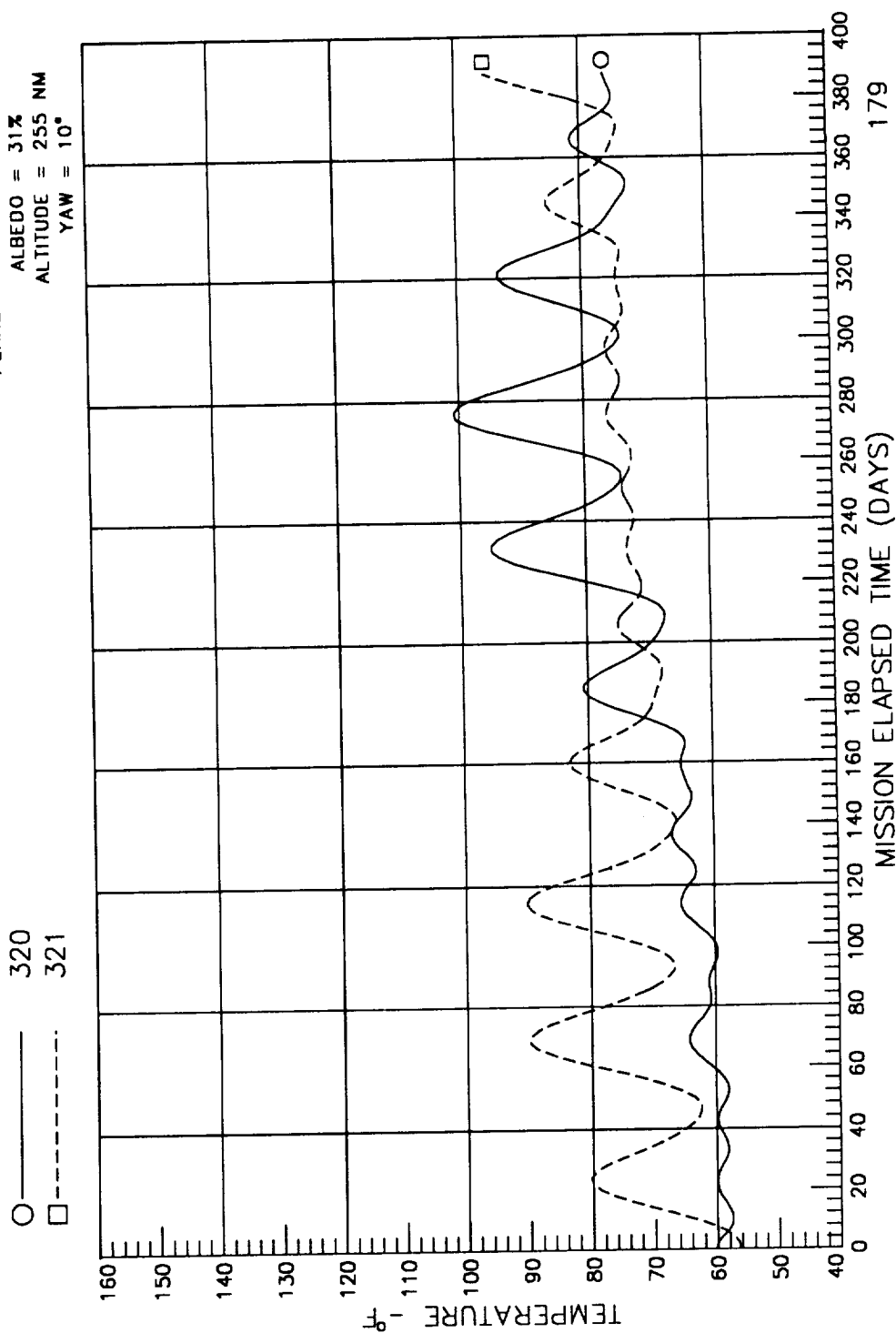


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### INTERIOR STRUTS

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

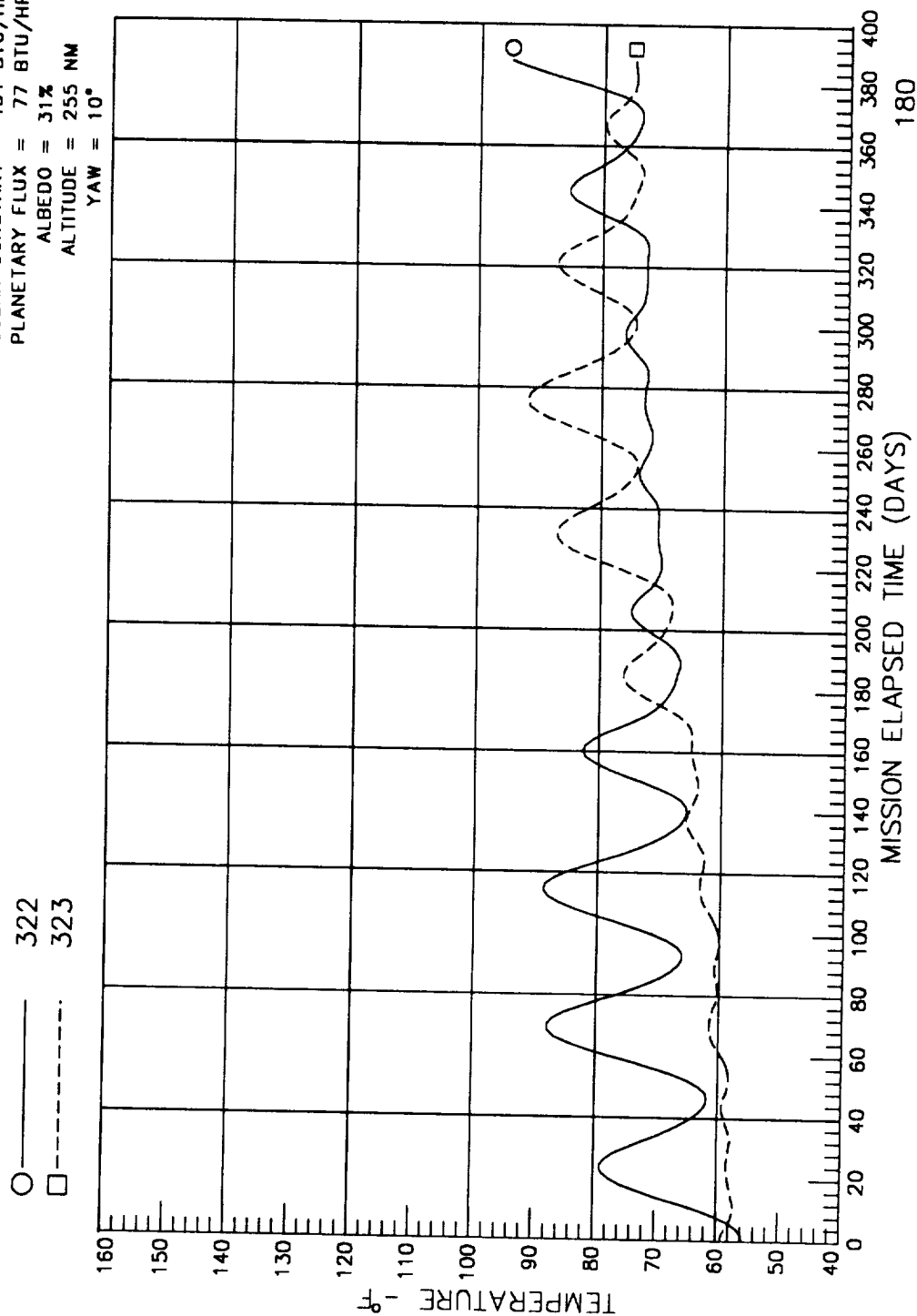


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### INTERIOR STRUTS

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

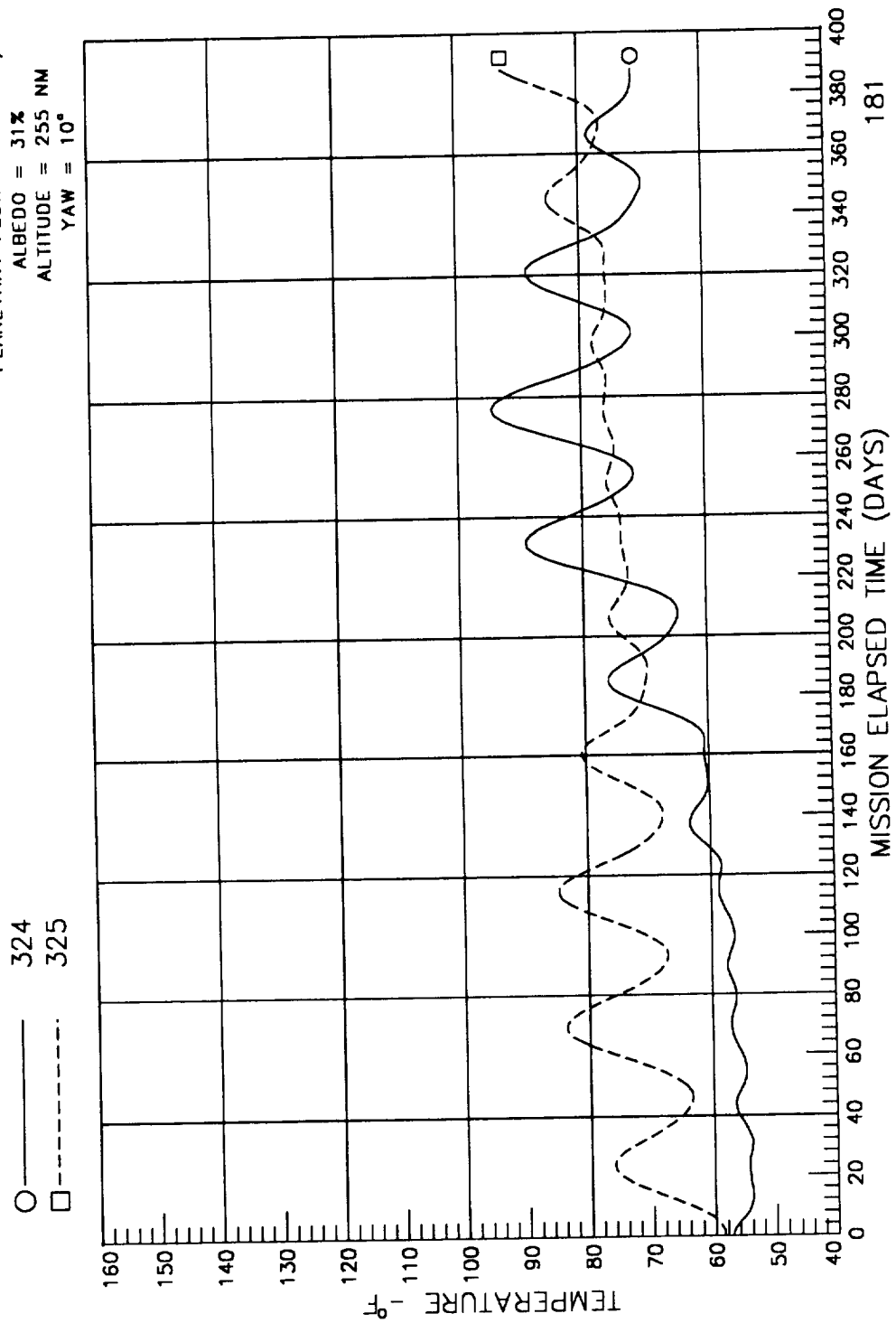


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### INTERIOR STRUTS

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

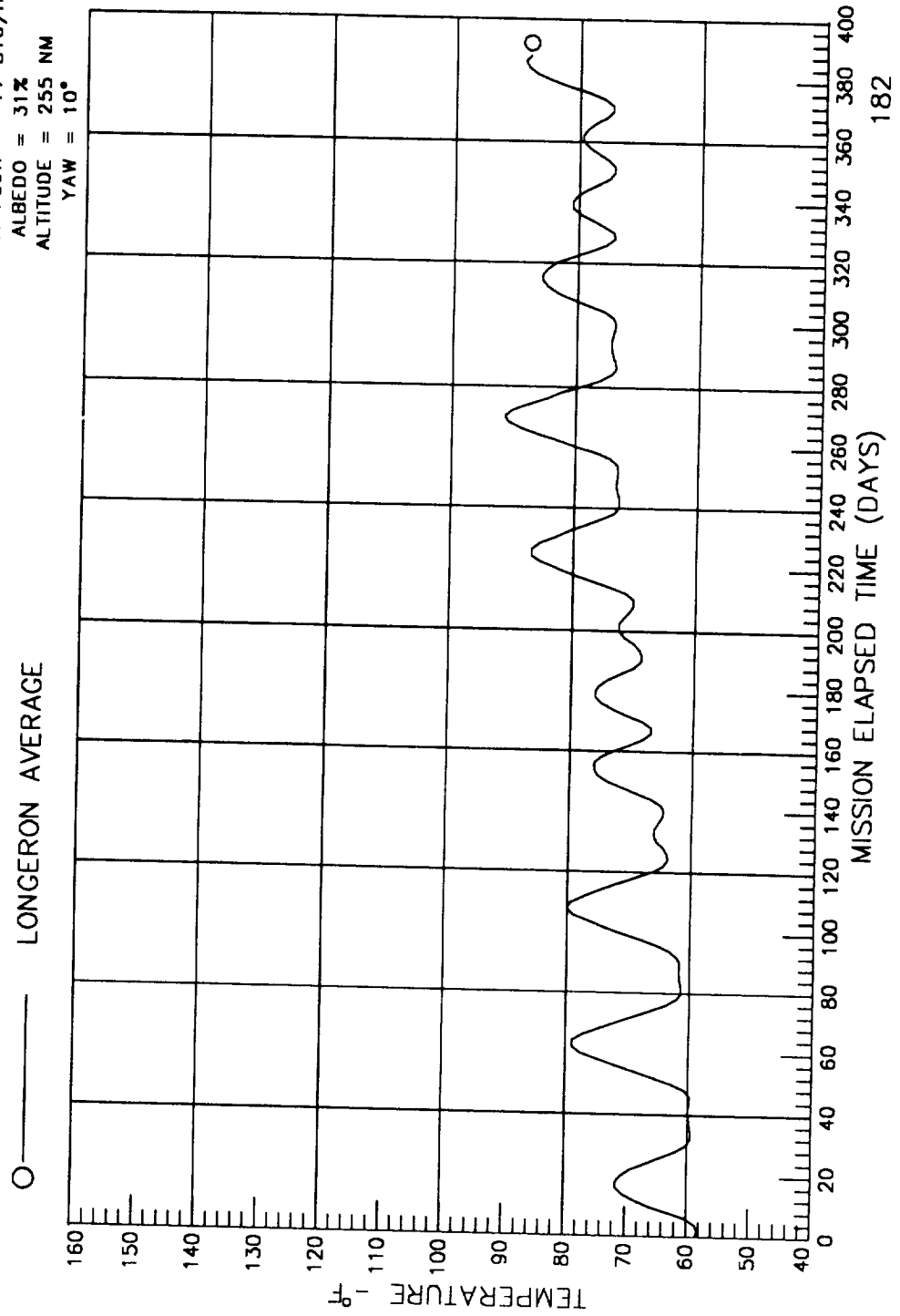


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### LONGERON AVERAGE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

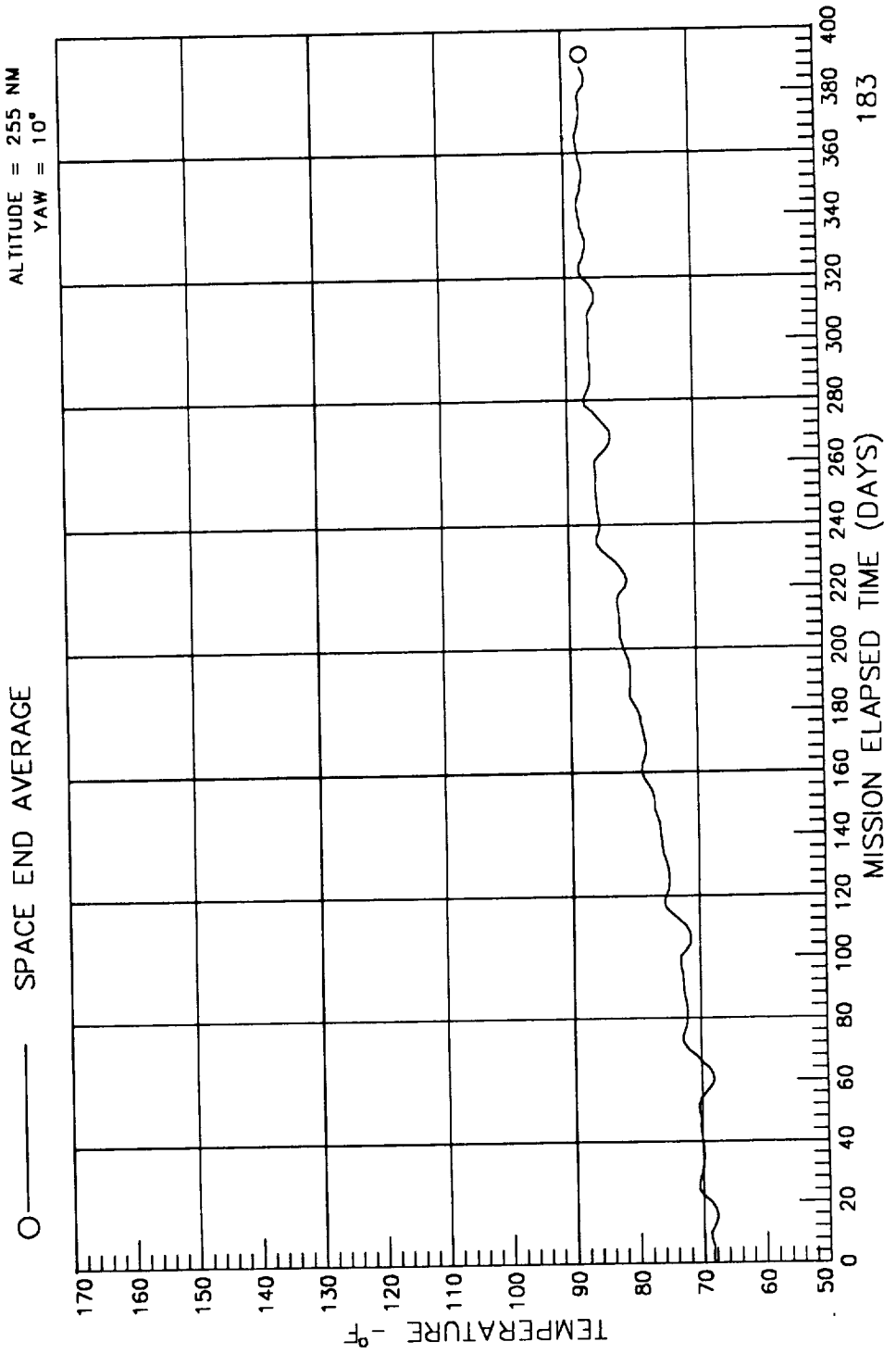


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### SPACE END AVERAGE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°

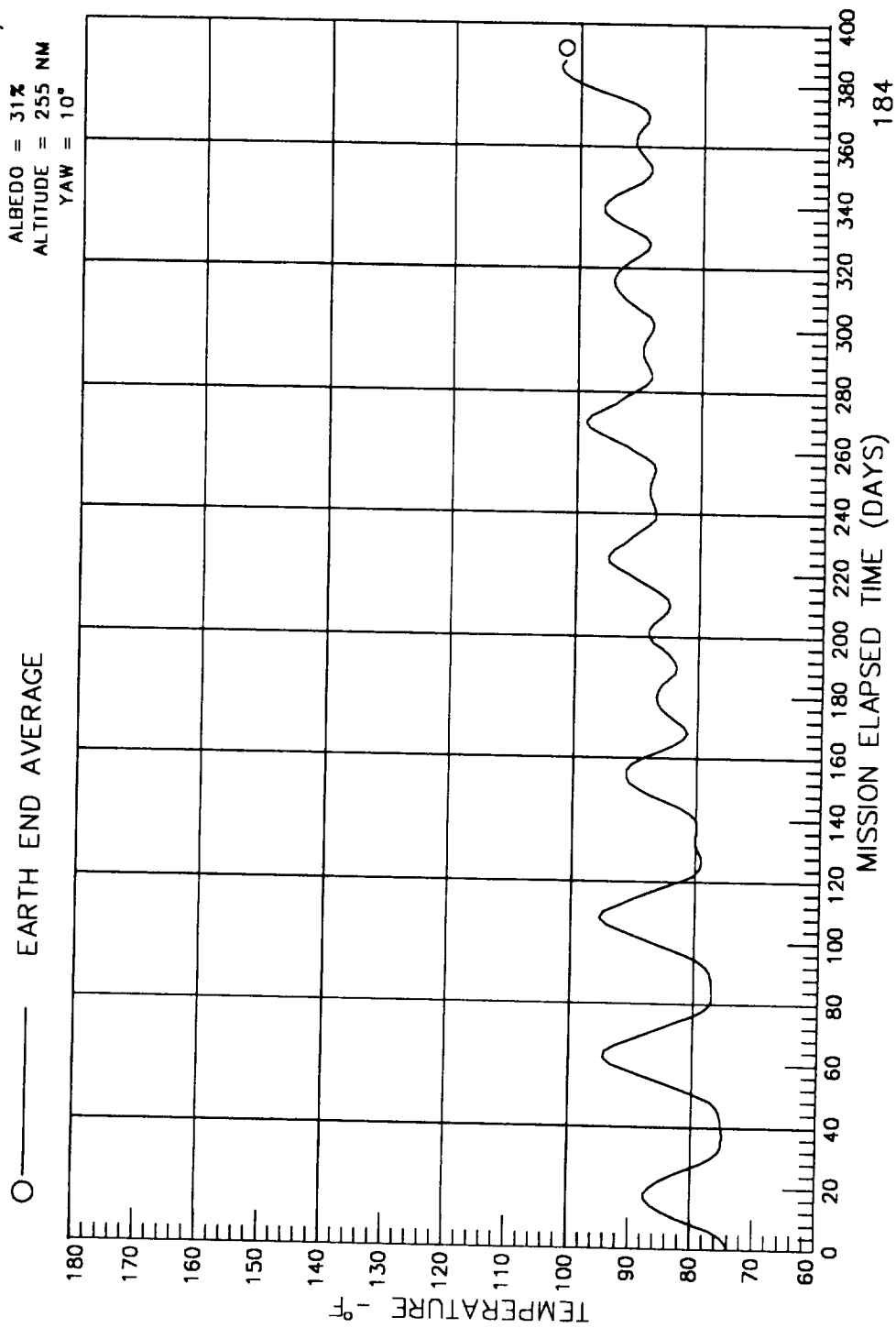


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 4/7/84 - 5/2/85

### EARTH END AVERAGE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 255 NM  
 YAW = 10°





## **APPENDIX D**

### **CHARTS *END OF MISSION TEMPERATURES***

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END OF MISSION**

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A3	A0187-	Chemistry of Micrometeoroids Structure Boundary	3, 93 165, 166, 177, 178	D - 13 D - 95
A4	A0178	Hi-Res Study of Ultra Heavy Cosmic Rays Structure Boundary	4, 94 166, 167, 178, 179	D - 19 D - 99
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A11	A0187-	Chemistry of Micrometeoroids Structure Boundary	11, 101 173, 174, 185, 186	D - 61 D - 127
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B2	S0001	Space Debris Impact Structure Boundary	14, 104 164, 165	D - 8 D - 92
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B8	A0056 A0147 S0001	High-Perf IR Multilayer Filters & Material Exposure of ERBE Components Space Debris Impact Structure Boundary	20, 110  170, 171	D - 44  D - 116
B9	A0134 S0010	Composites for Large Space Structures Spacecraft Coatings Structure Boundary	21, 111  171, 172	D - 50  D - 120
B10	S1005	Transverse Flat Heat Pipe Structure Boundary	22, 112 172, 173	D - 56 D - 124
B11	S0001	Space Debris Impact Structure Boundary	23, 113 173, 174	D - 62 D - 128
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C1		---GRAPPLE--- Structure Boundary	25, 115, 274 163, 164, 221	D - 3 D - 88, 151
C2	A0015 A0187- M0006	Free Flyer Biostack Isotopic Micrometeoroid Measurement Space Environment Effects Structure Boundary	26, 116, 276  164, 165, 222	D - 9 D - 92, 151
C3	A0023	Multiple Foil Microabrasion Package	27, 117	D - 15

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E3	S1002	Coatings & Solar Cells from Germany Structure Boundary	51, 141 242, 243	D - 17 D - 97
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E5	A0044 A0135 S0050	Holographic Data Storage Crystals Pyroelectric Infrared Detectors Active Optical System Components Structure Boundary	53, 143  244, 245	D - 29  D - 105
E6	A0023 M0002- S1003 S1006	Multiple Foil Microabrasion Package Heavy Cosmic Ray Nuclei Ion-Beam-Textured Surfaces Balloon Materials Structure Boundary	54, 144  245, 246	D - 35  D - 109
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	A0172	Effects of Solar Radiation on Glasses		
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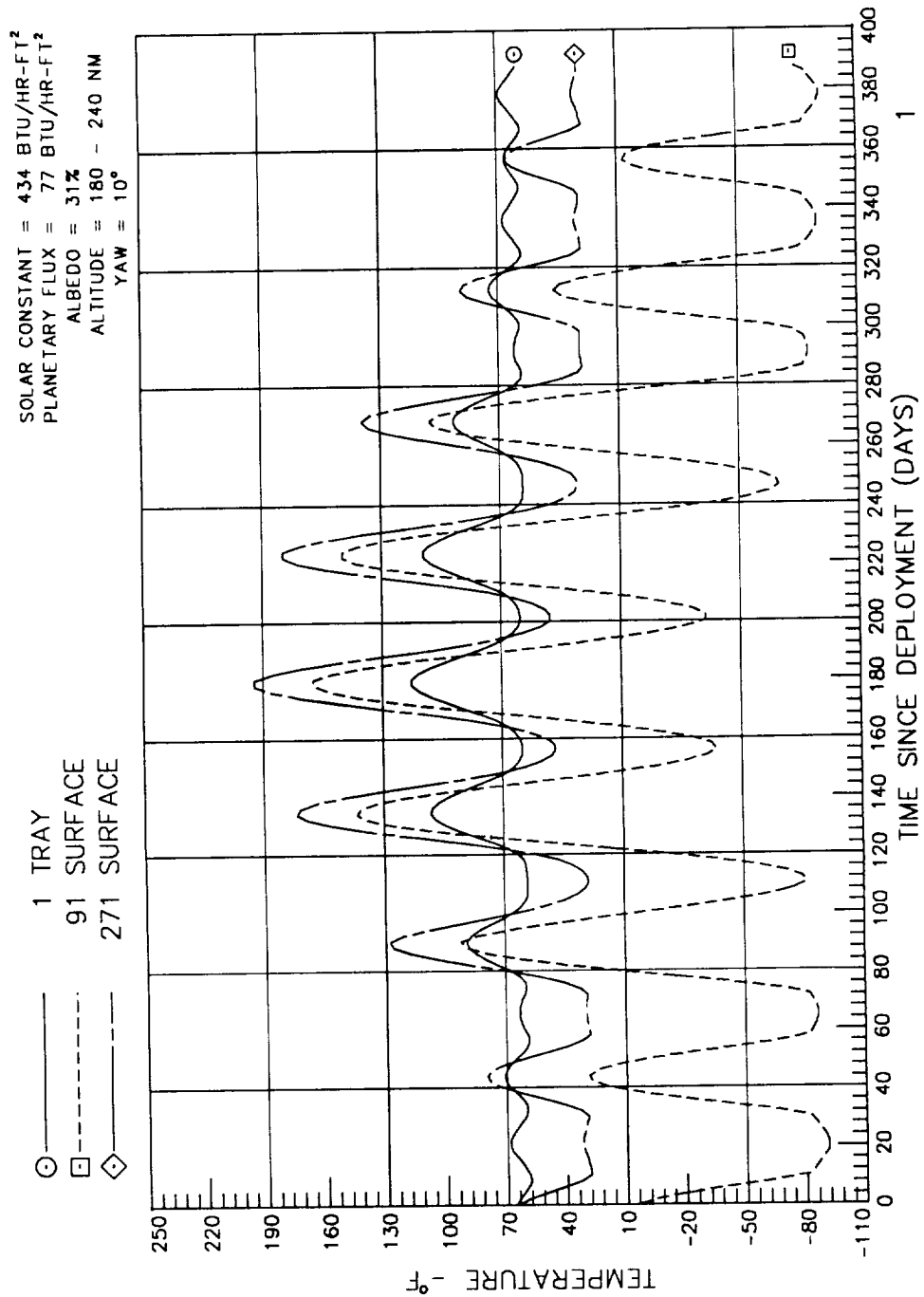
LOC	EXP	EXPERIMENT TITLE / DESCRIPTION	NODE	CHART NUMBER
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INTERIOR STRUTS			322,323	D - 180
INTERIOR STRUTS			324,325	D - 181

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# LONG DURATION EXPOSURE FACILITY

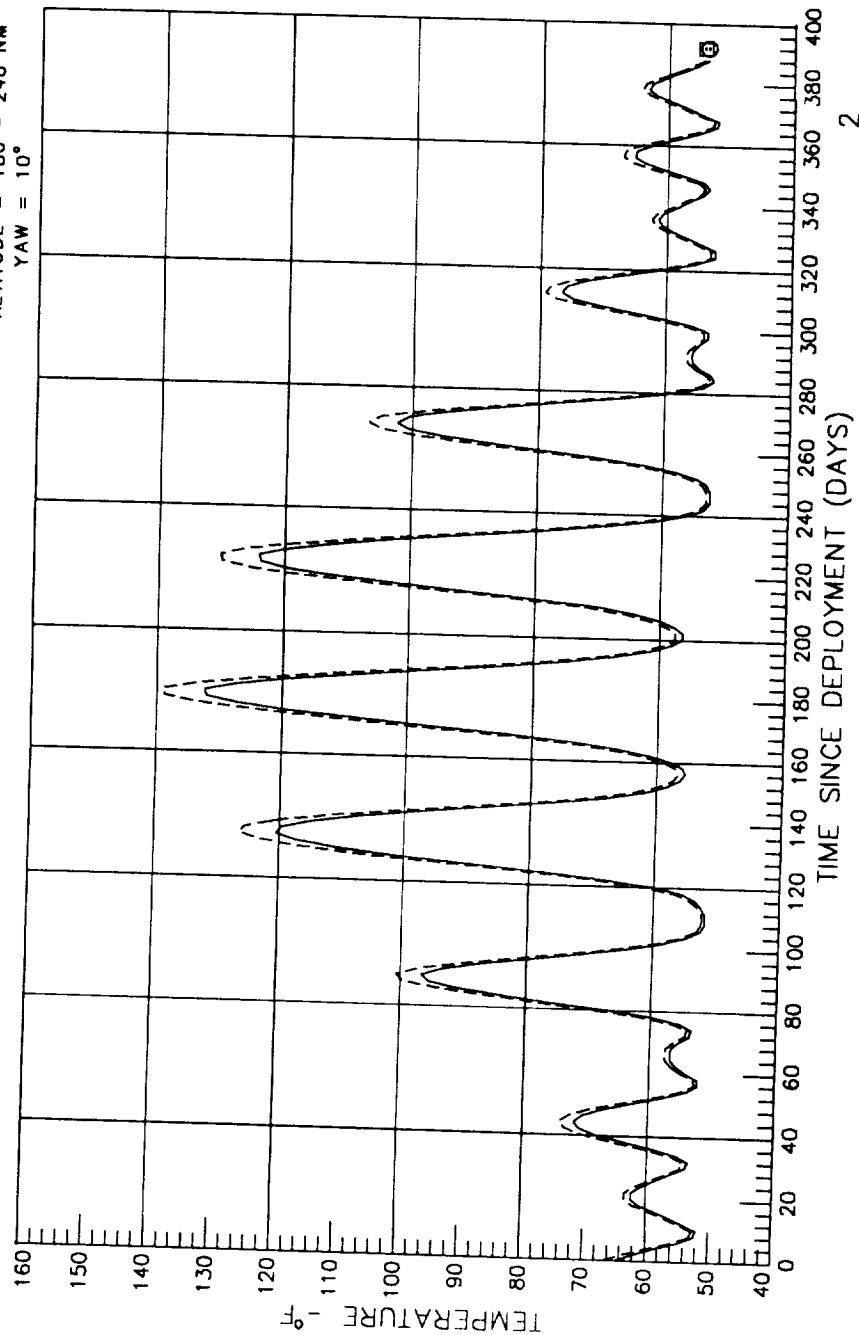
DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: A1



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: B1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 13 TRAY  
 □ - - - 103 SURFACE



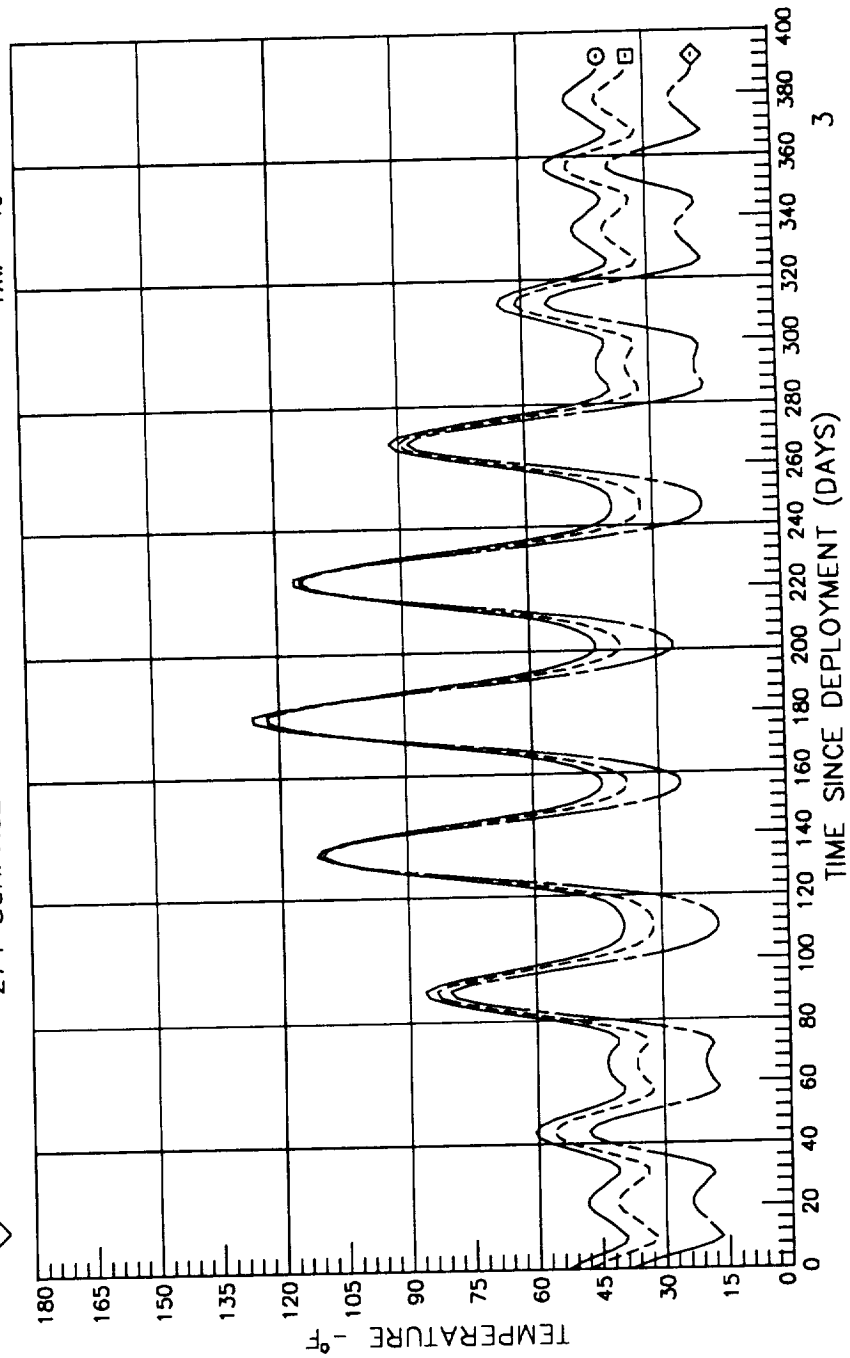
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: C1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

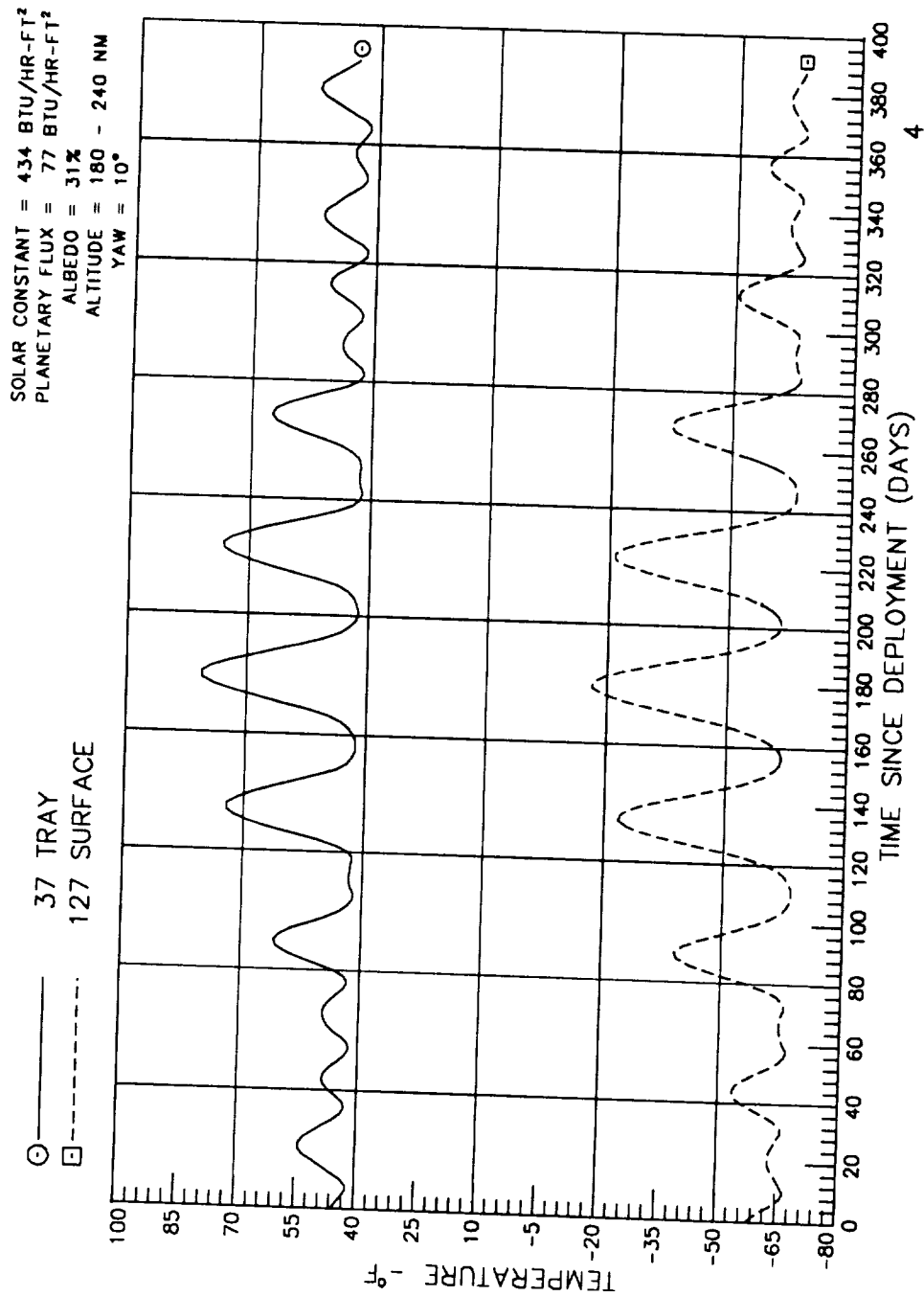
25 TRAY  
 115 SURFACE  
 274 SURFACE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D1



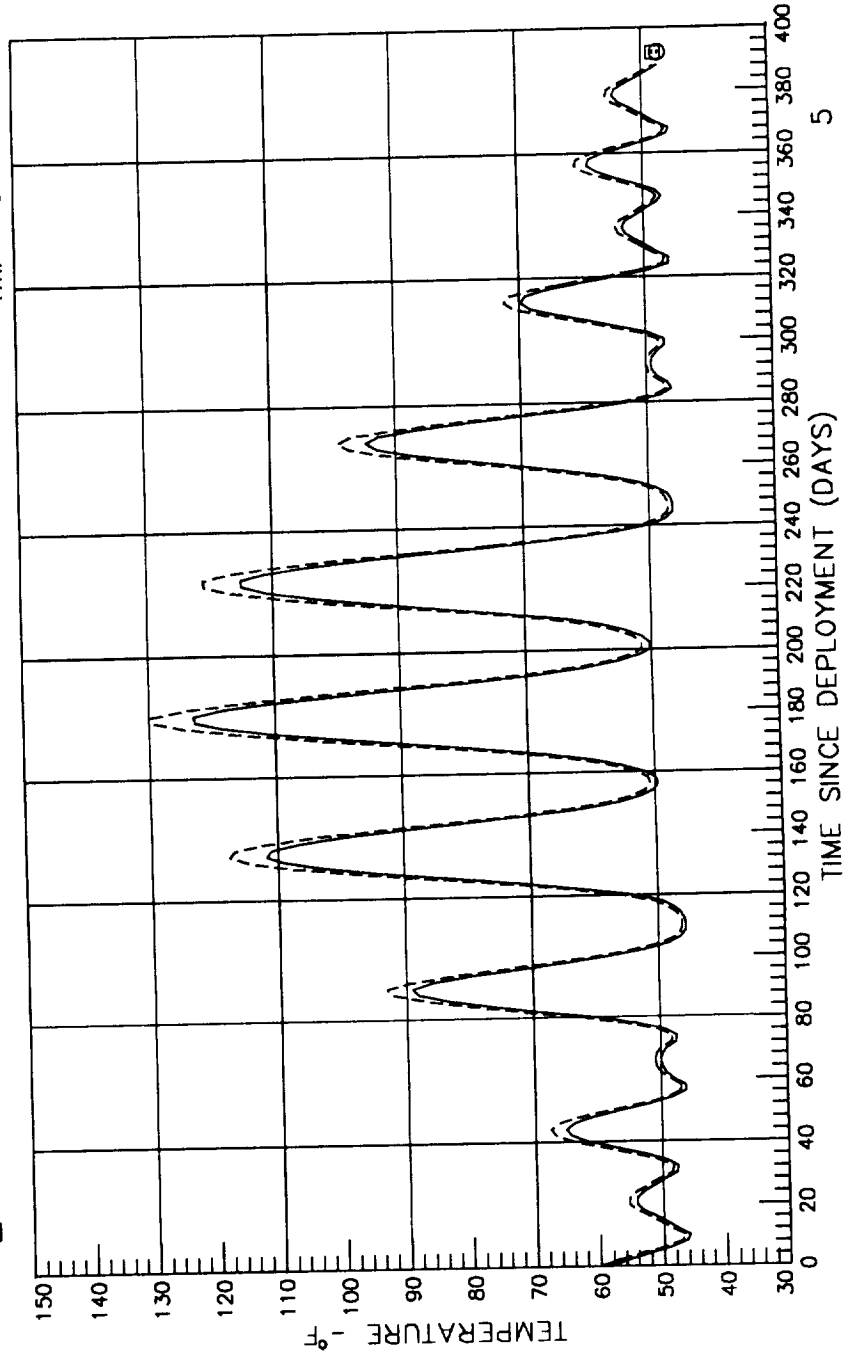
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 49 TRAY  
 □ 139 SURFACE

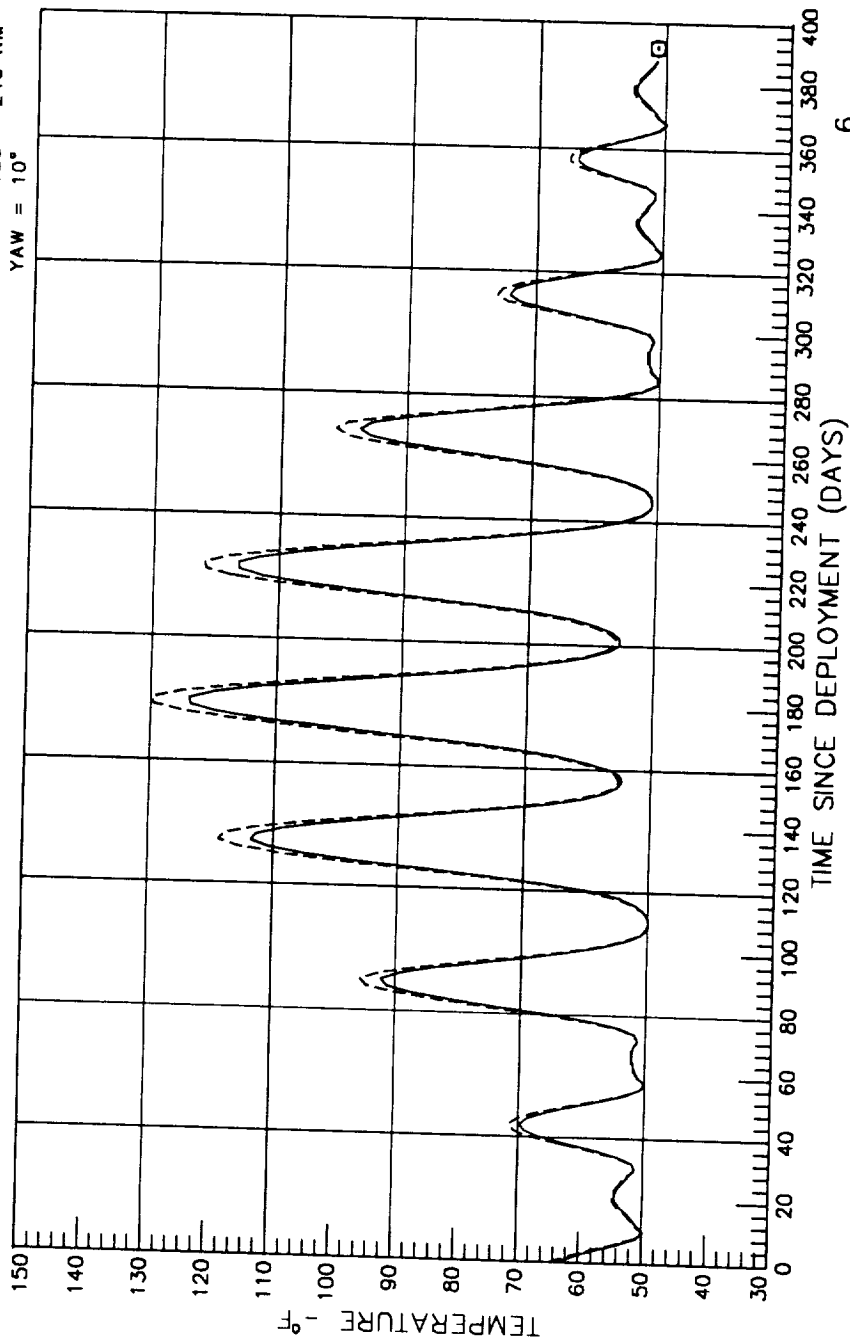


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: F1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°

○ — 61 TRAY  
□ - - - 151 SURFACE



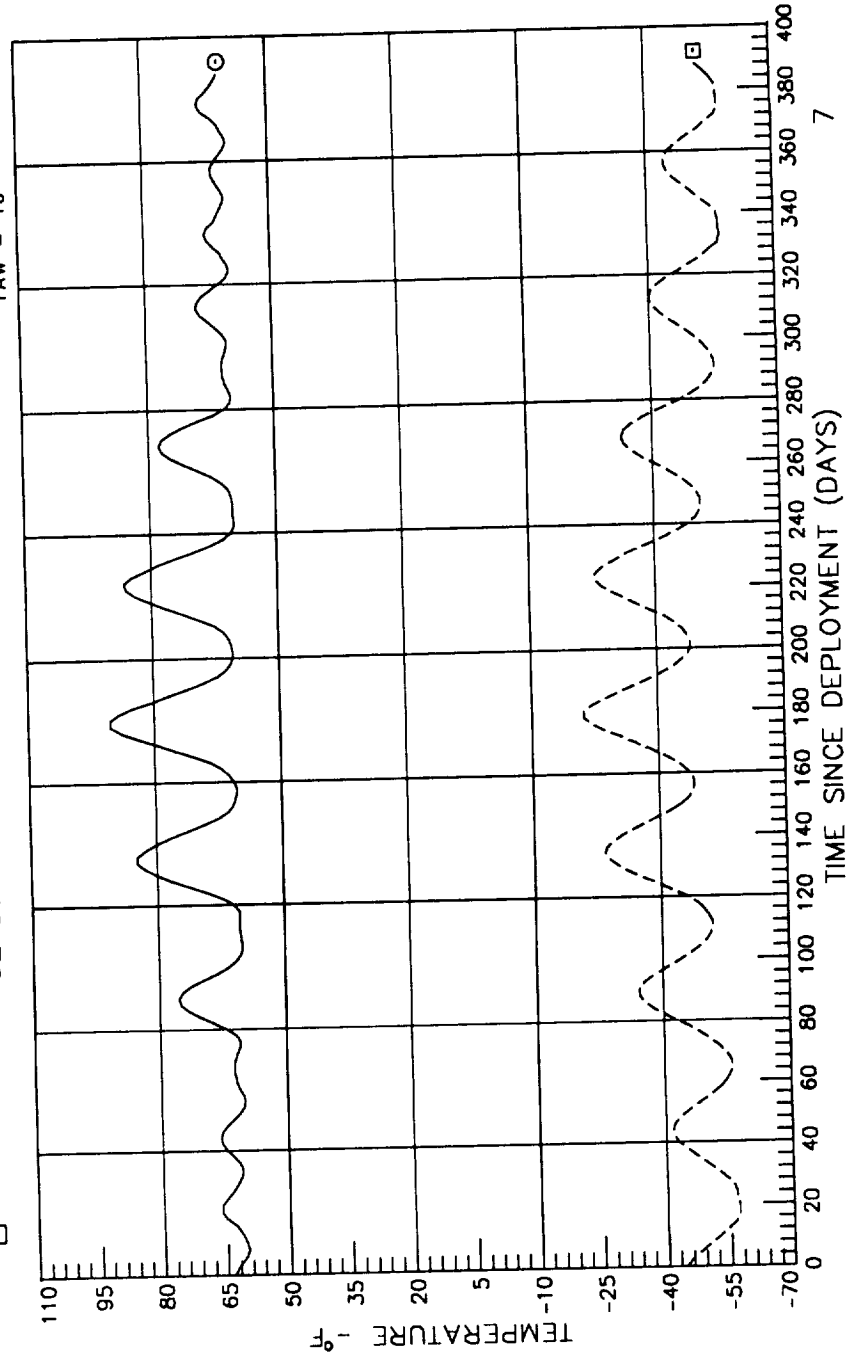
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: A2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 2 TRAY  
 □ 92 SURFACE



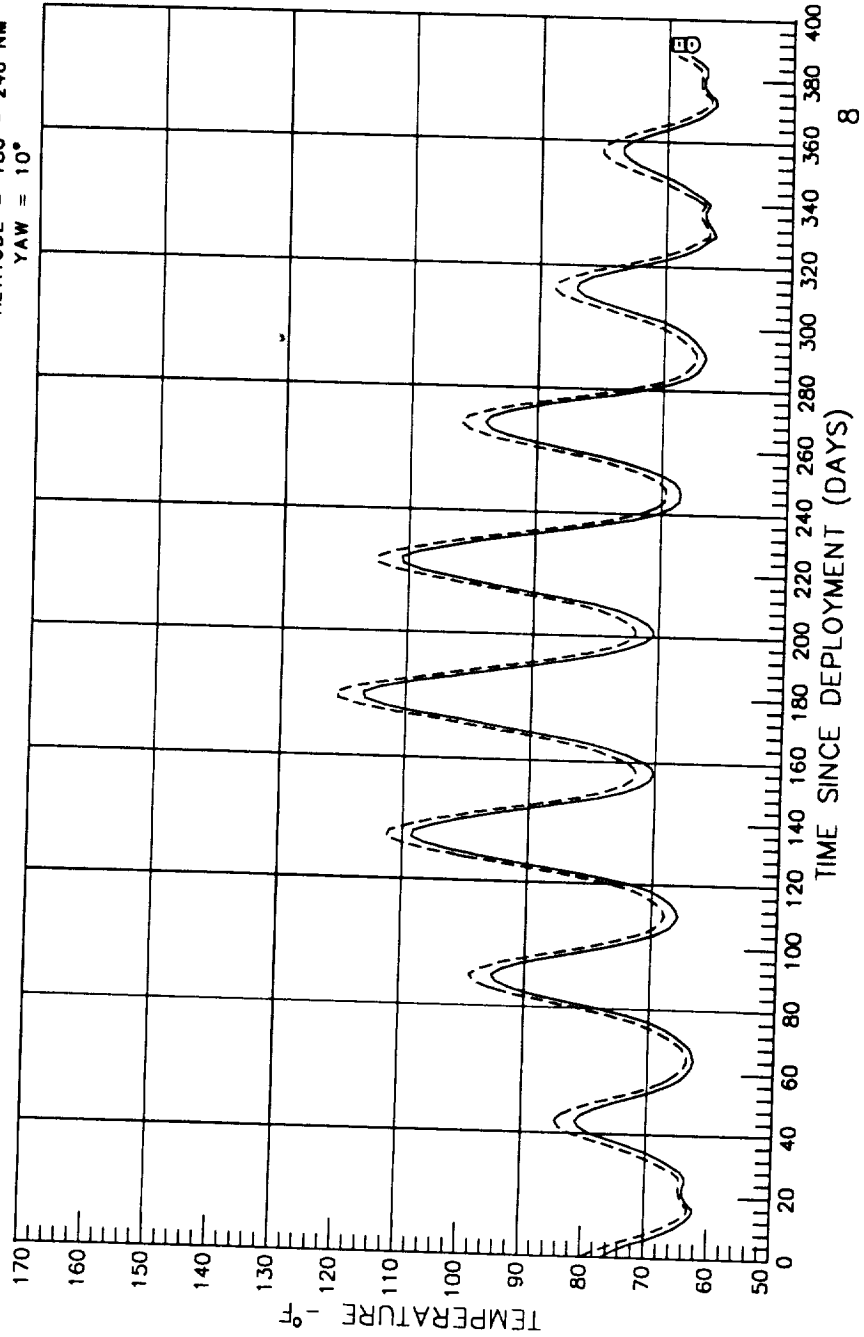
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 14 TRAY  
 □ - - - 104 SURFACE





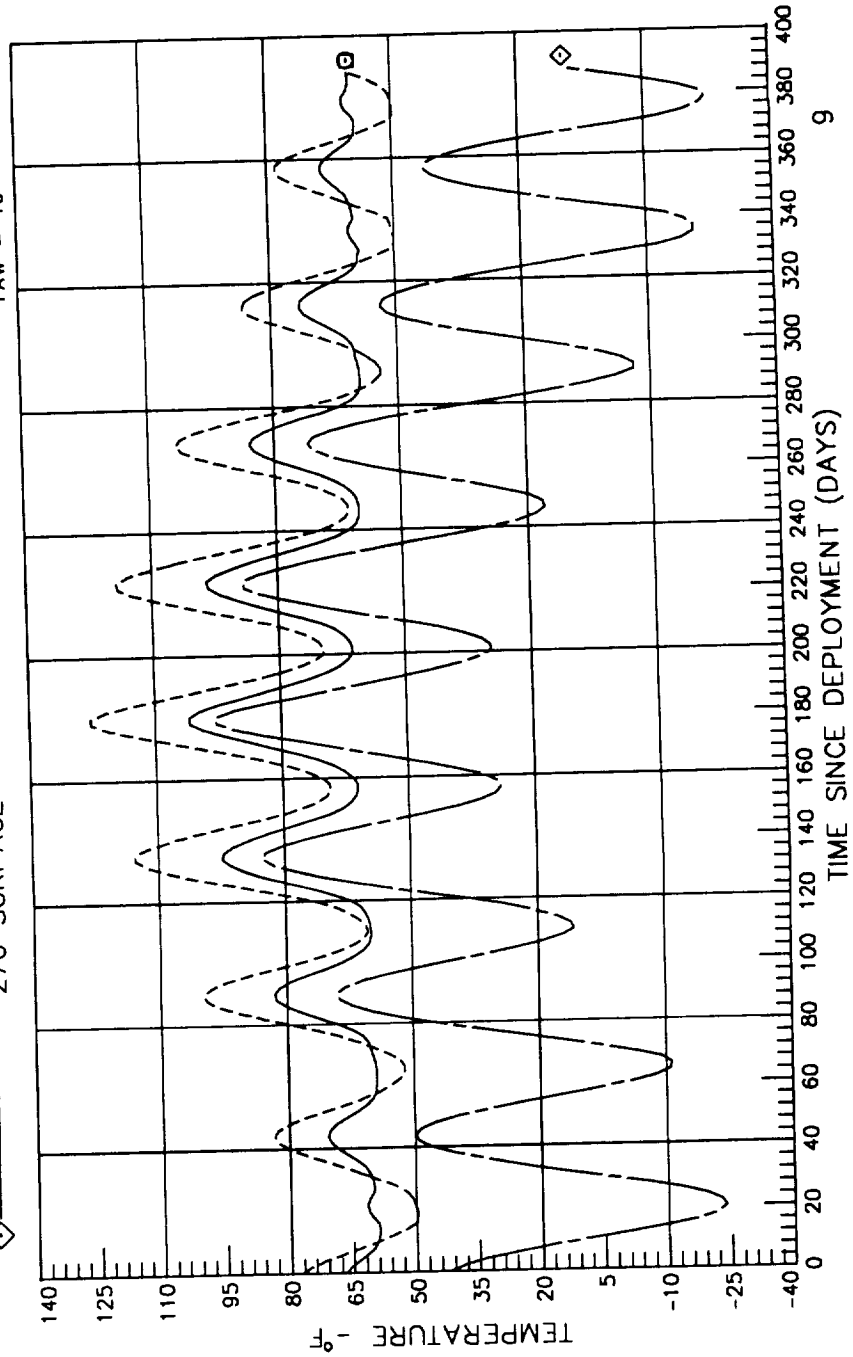
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: C2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

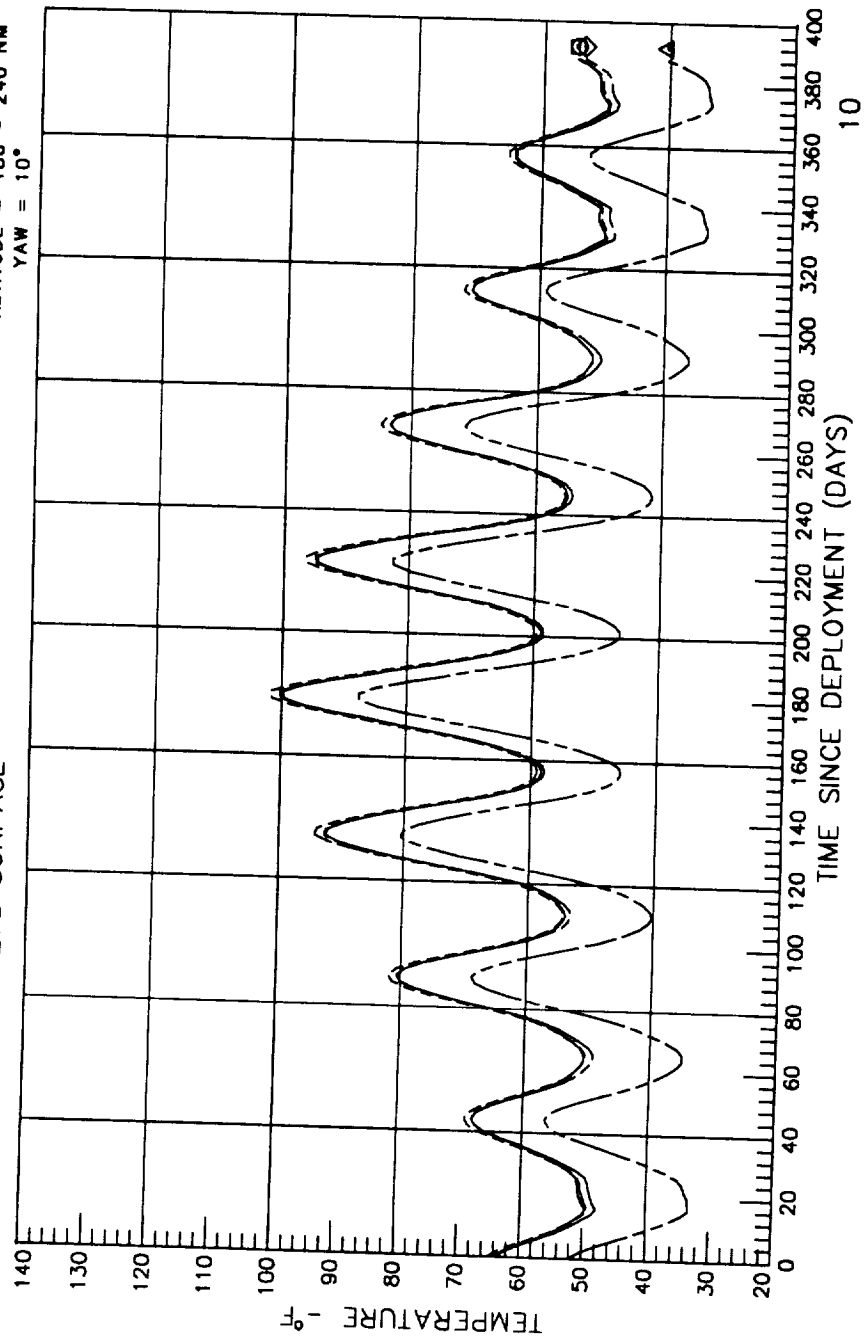
○ 26 TRAY  
 □ 116 SURFACE  
 ◇ 276 SURFACE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: D2

- 38 TRAY
- 128 SURFACE
- ◇ 277 SURFACE
- △ 278 SURFACE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



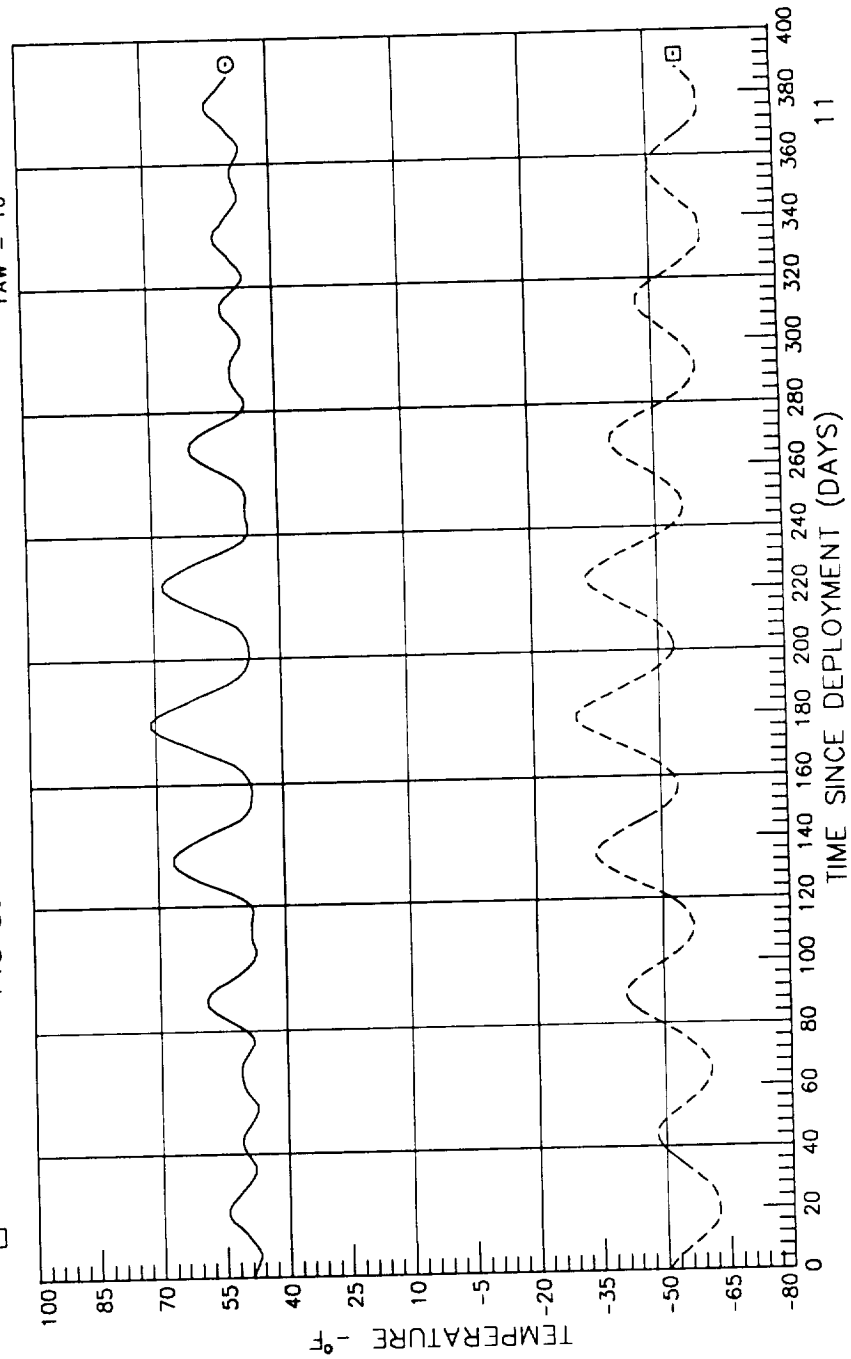
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

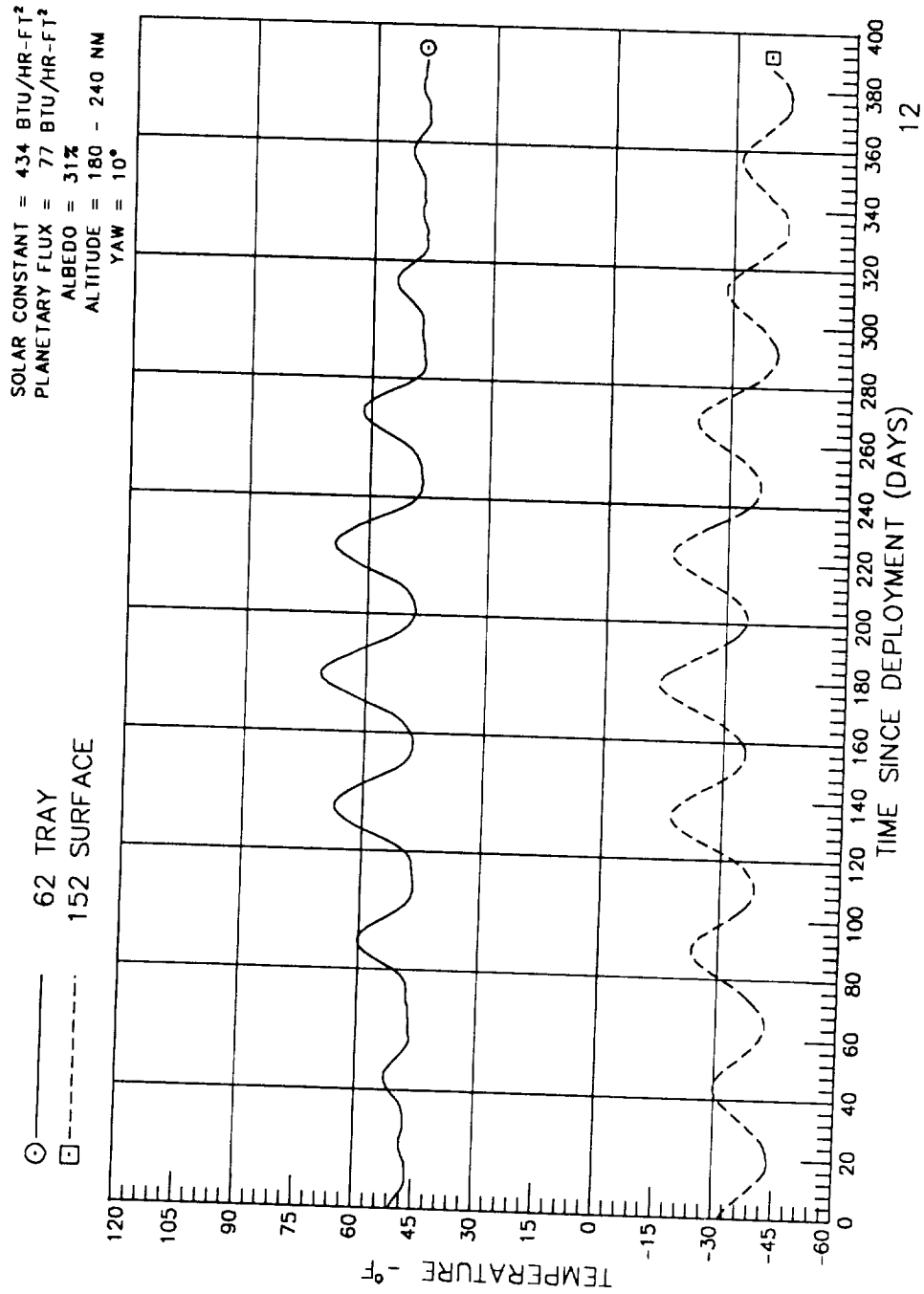
○ 50 TRAY  
 □ 140 SURFACE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

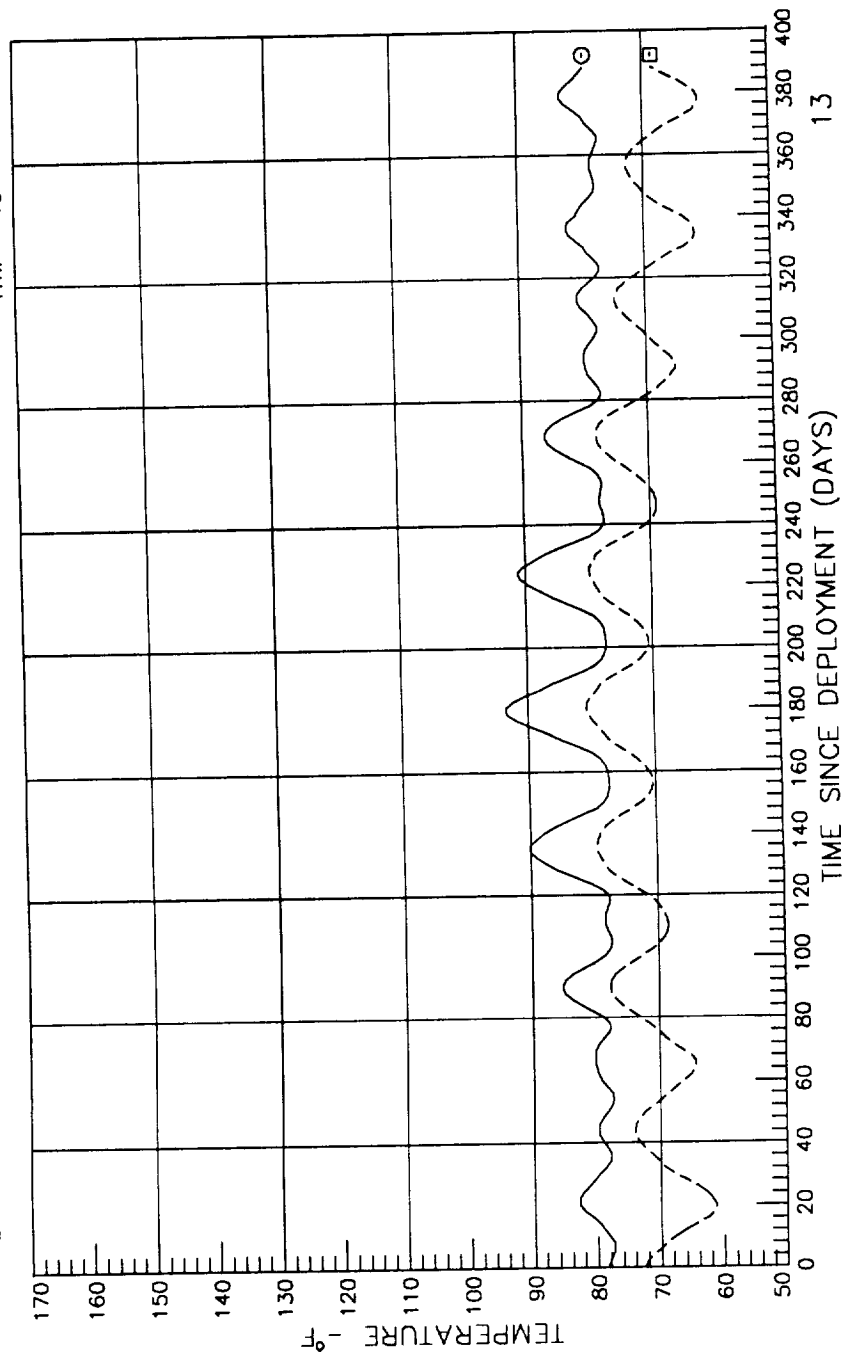
### LOCATION: F2



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: A3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

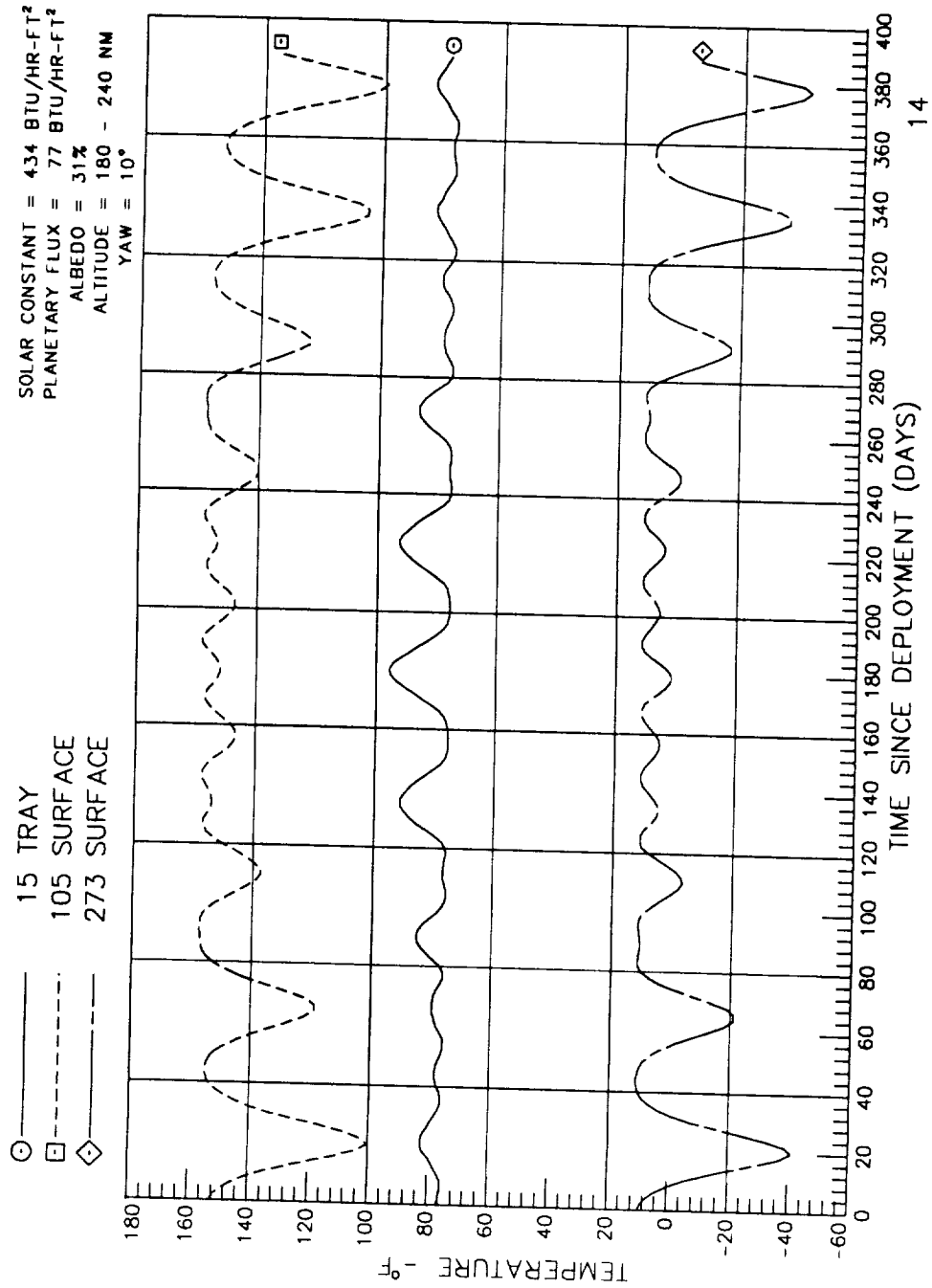
○ 3 TRAY  
 □ 93 SURFACE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B3



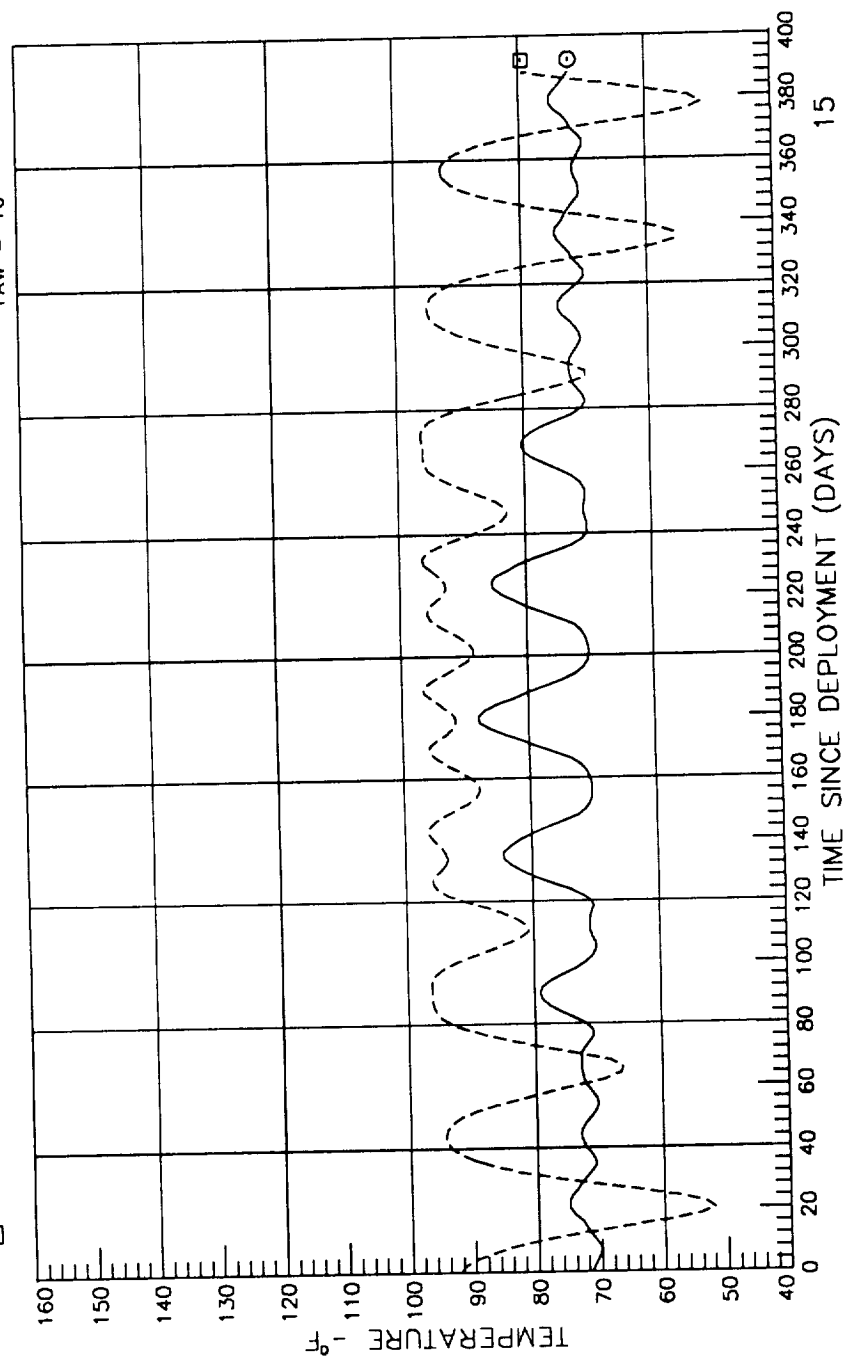
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: C3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 27 TRAY  
 □ 117 SURFACE



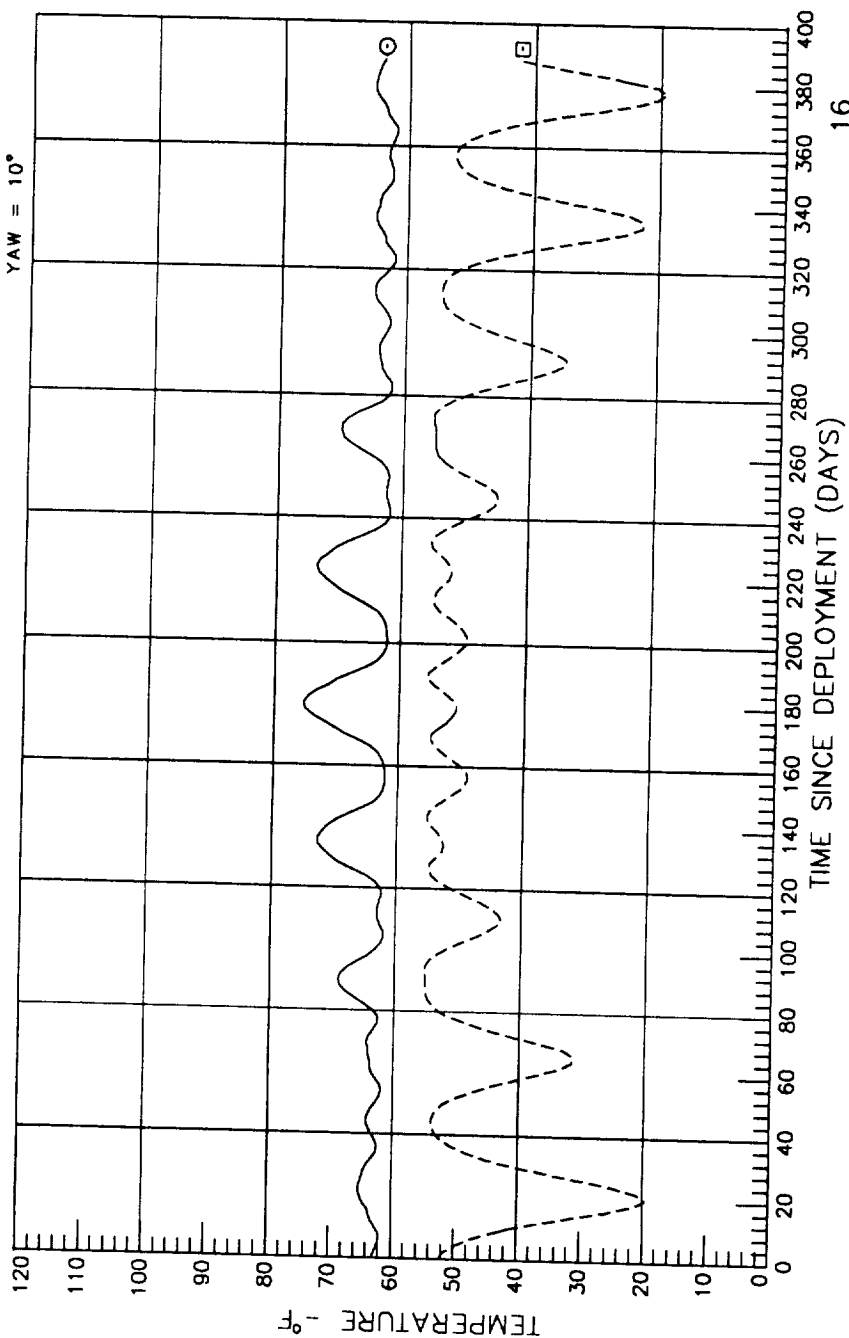
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 39 TRAY  
 □ 129 SURFACE





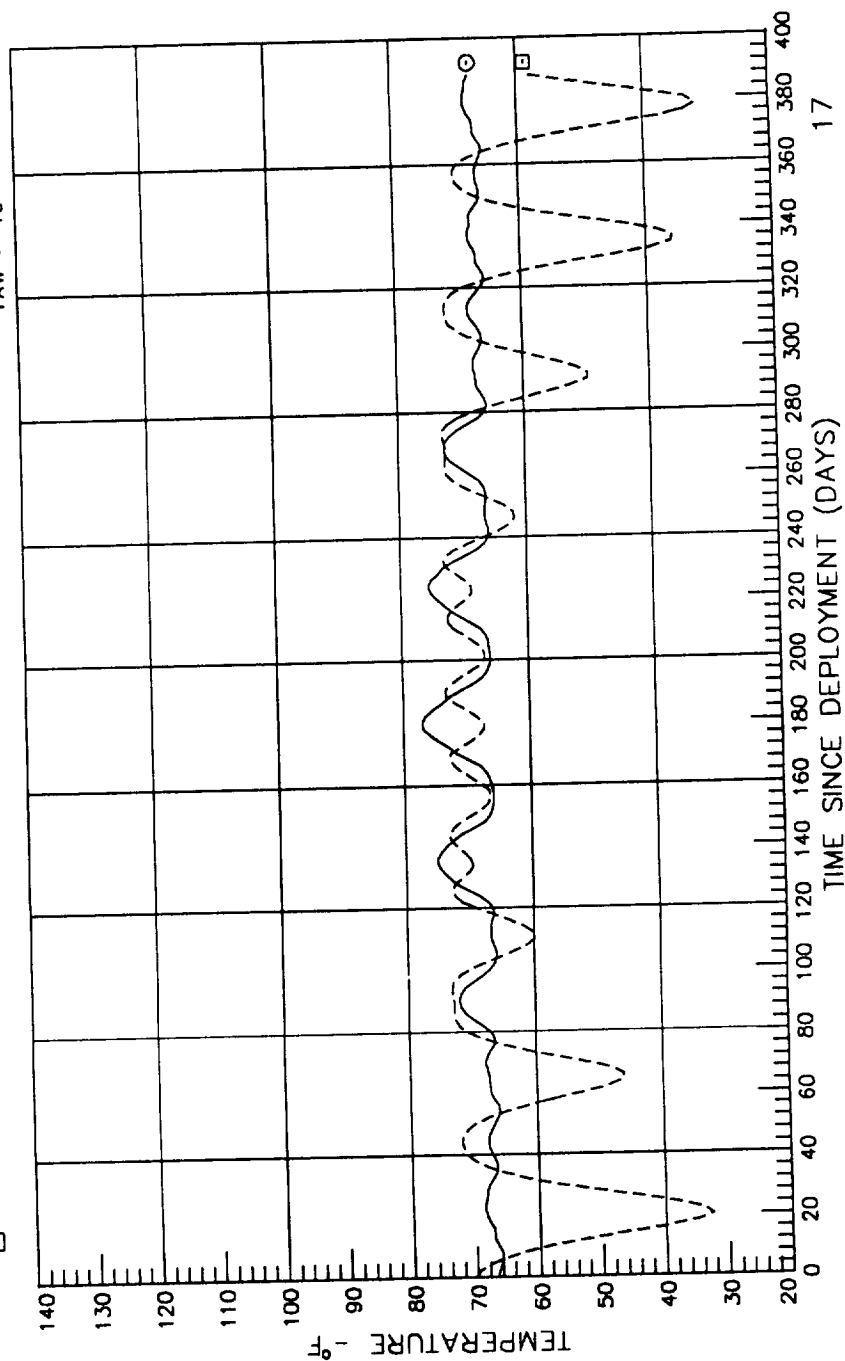
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 51 TRAY  
 □ 141 SURFACE



# LONG DURATION EXPOSURE FACILITY

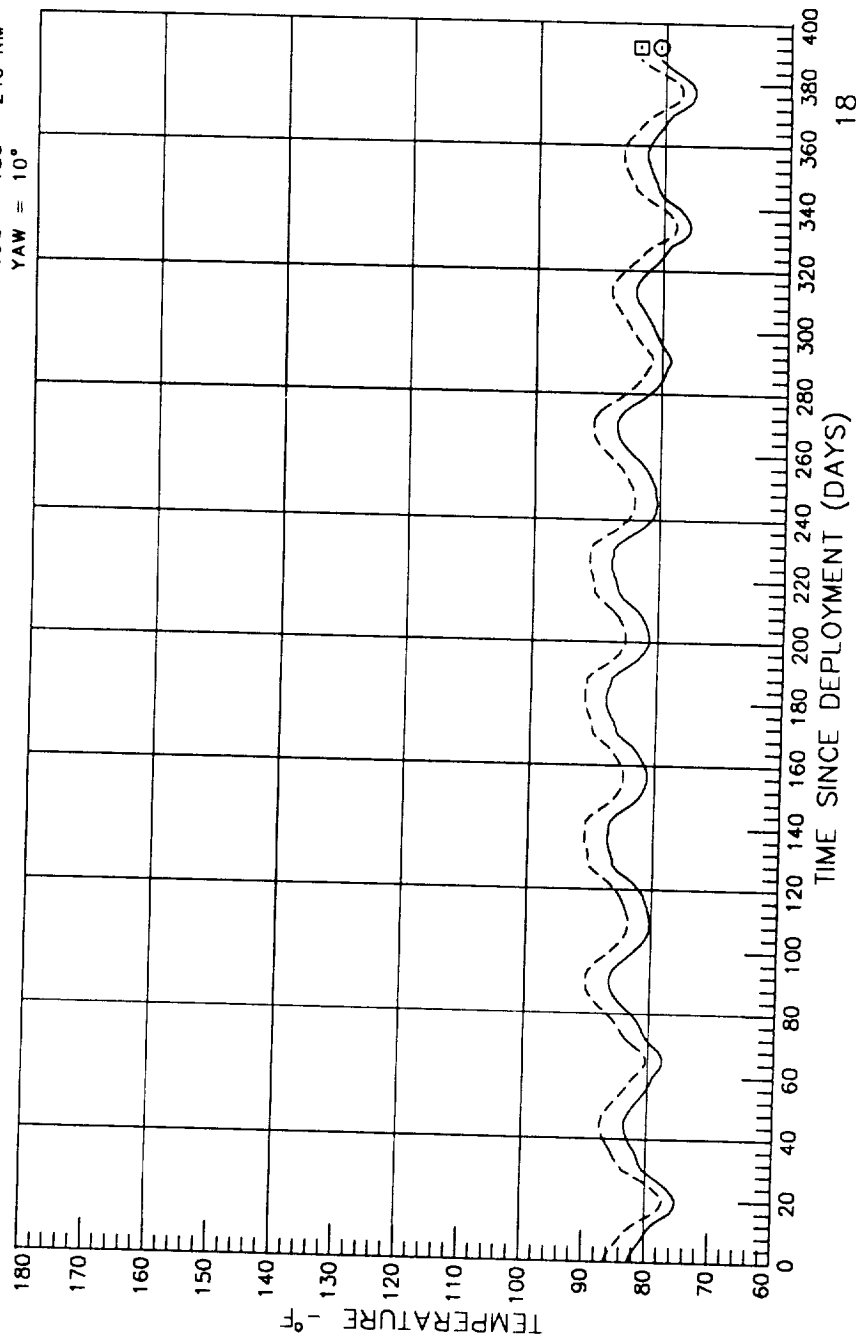
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: F3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

63 TRAY  
 153 SURFACE

○  
 □



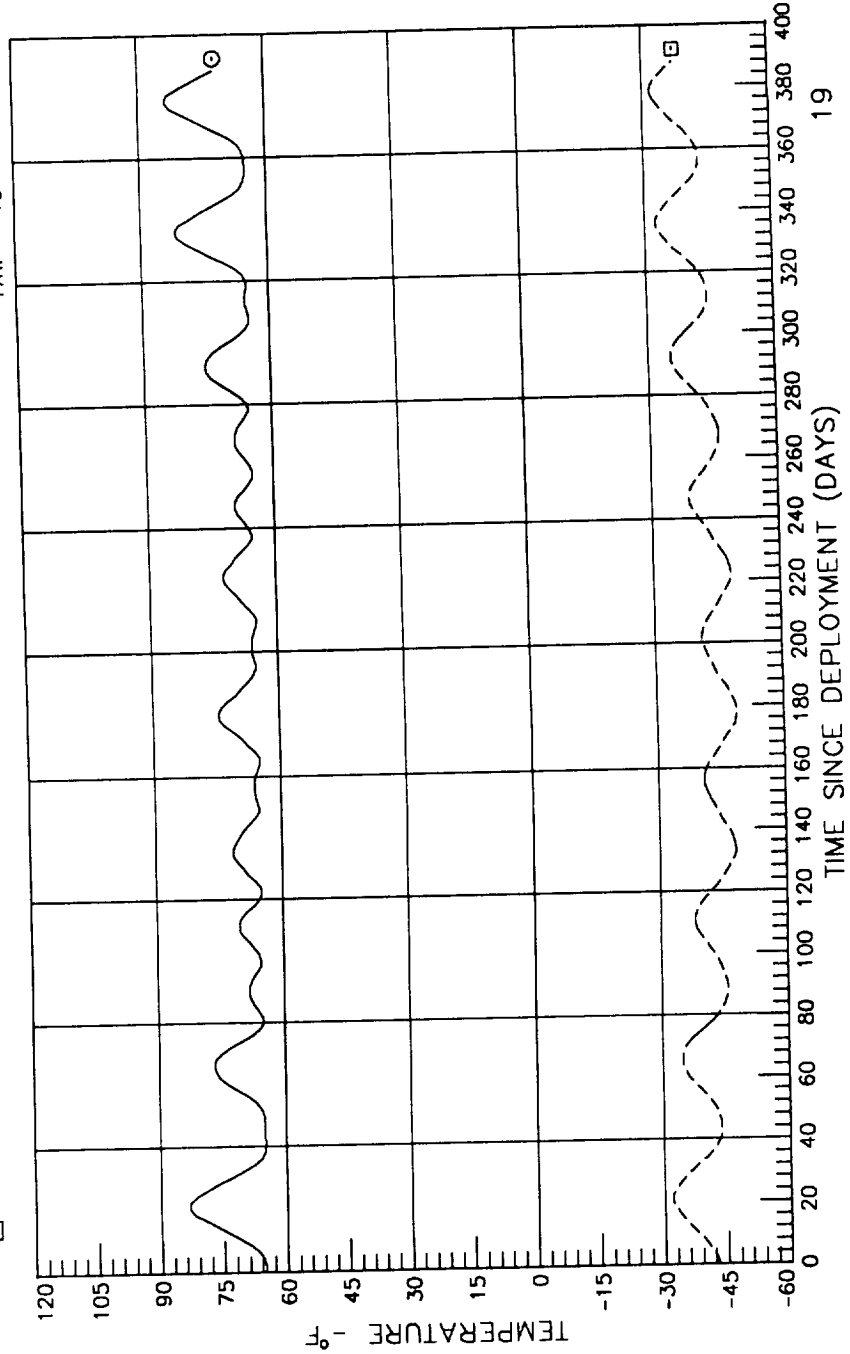
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: A4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

— 4 TRAY  
 --- 94 SURFACE



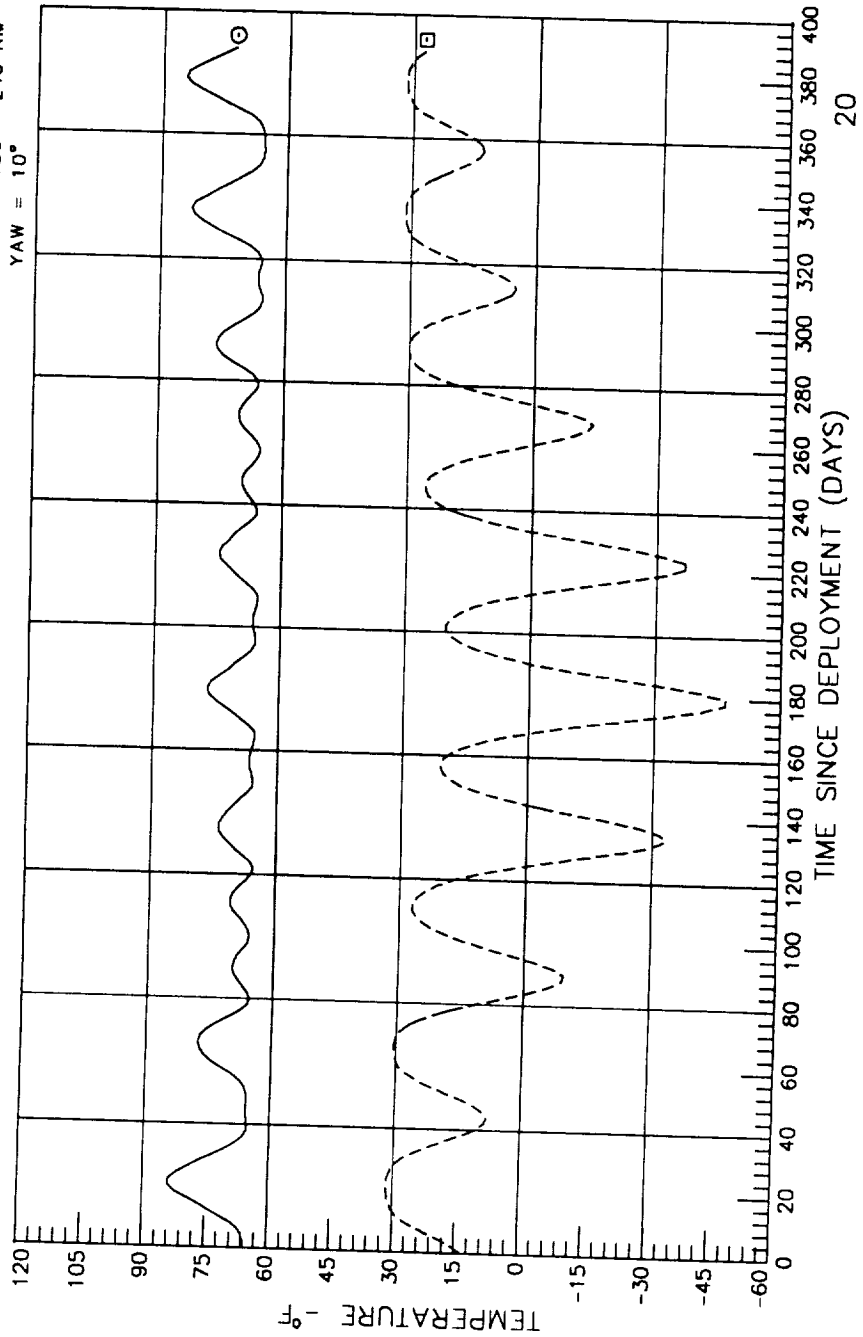
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 16 TRAY  
 □ 106 SURFACE



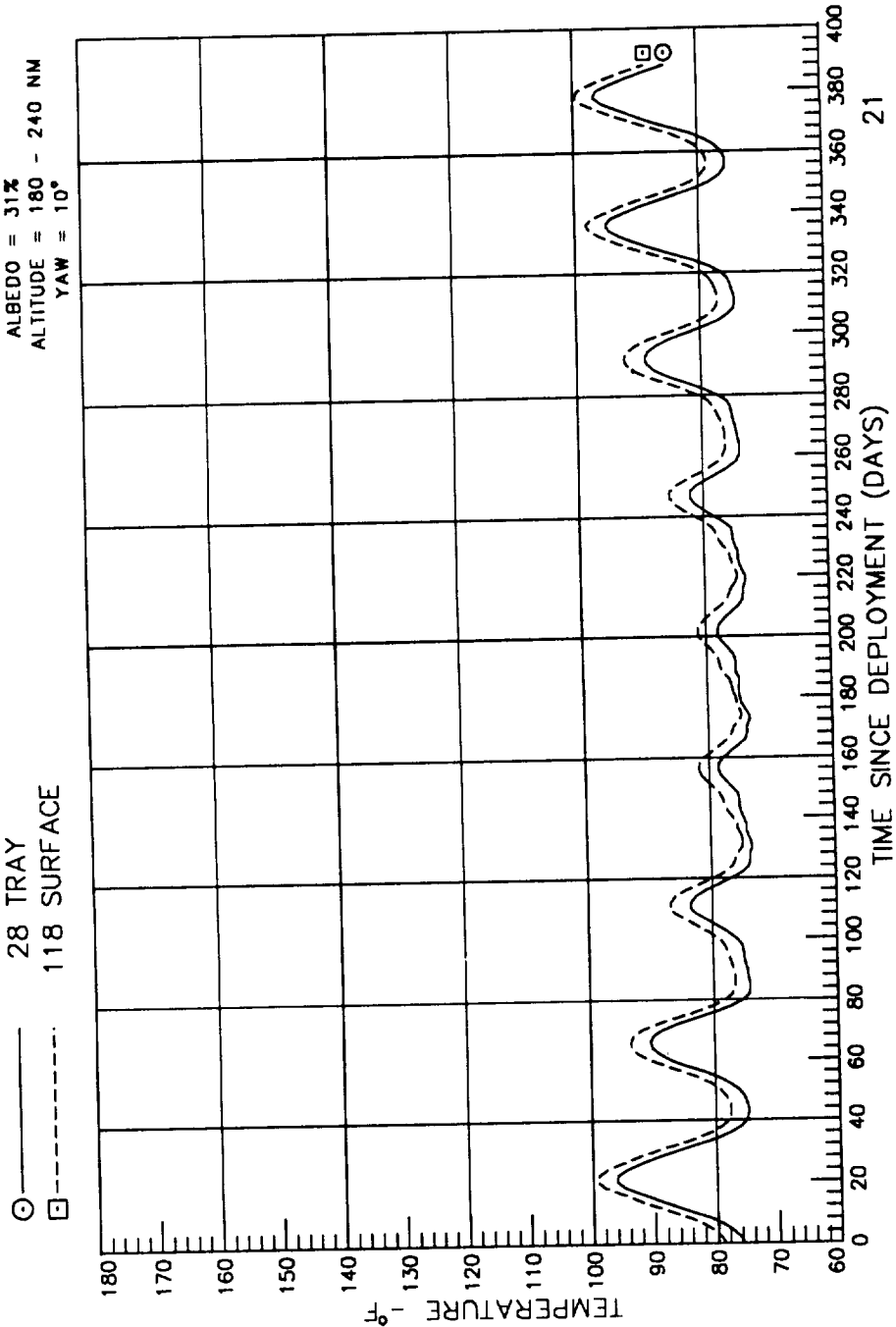
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: C4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

28 TRAY  
 118 SURFACE



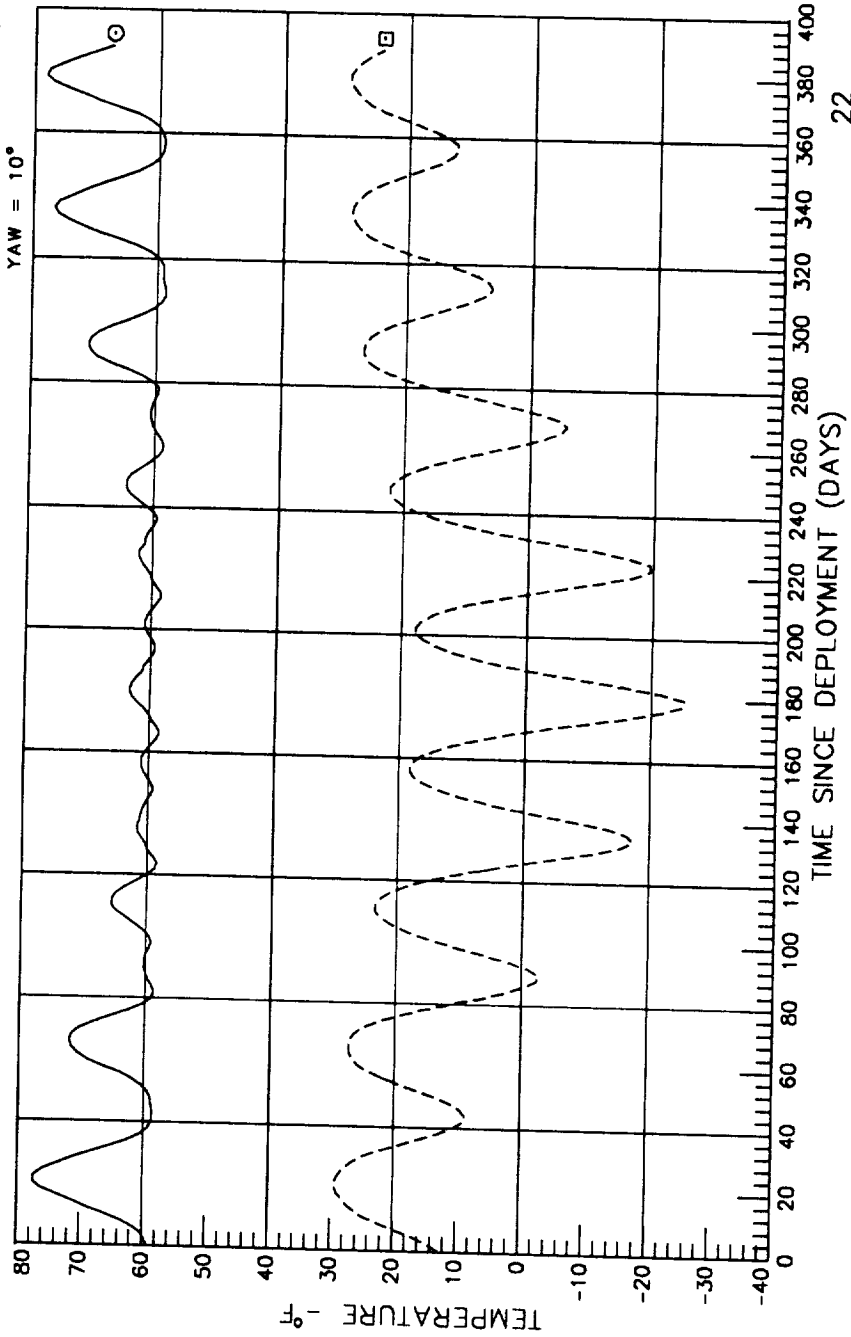
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○—— 40 TRAY  
 □----- 130 SURFACE



# LONG DURATION EXPOSURE FACILITY

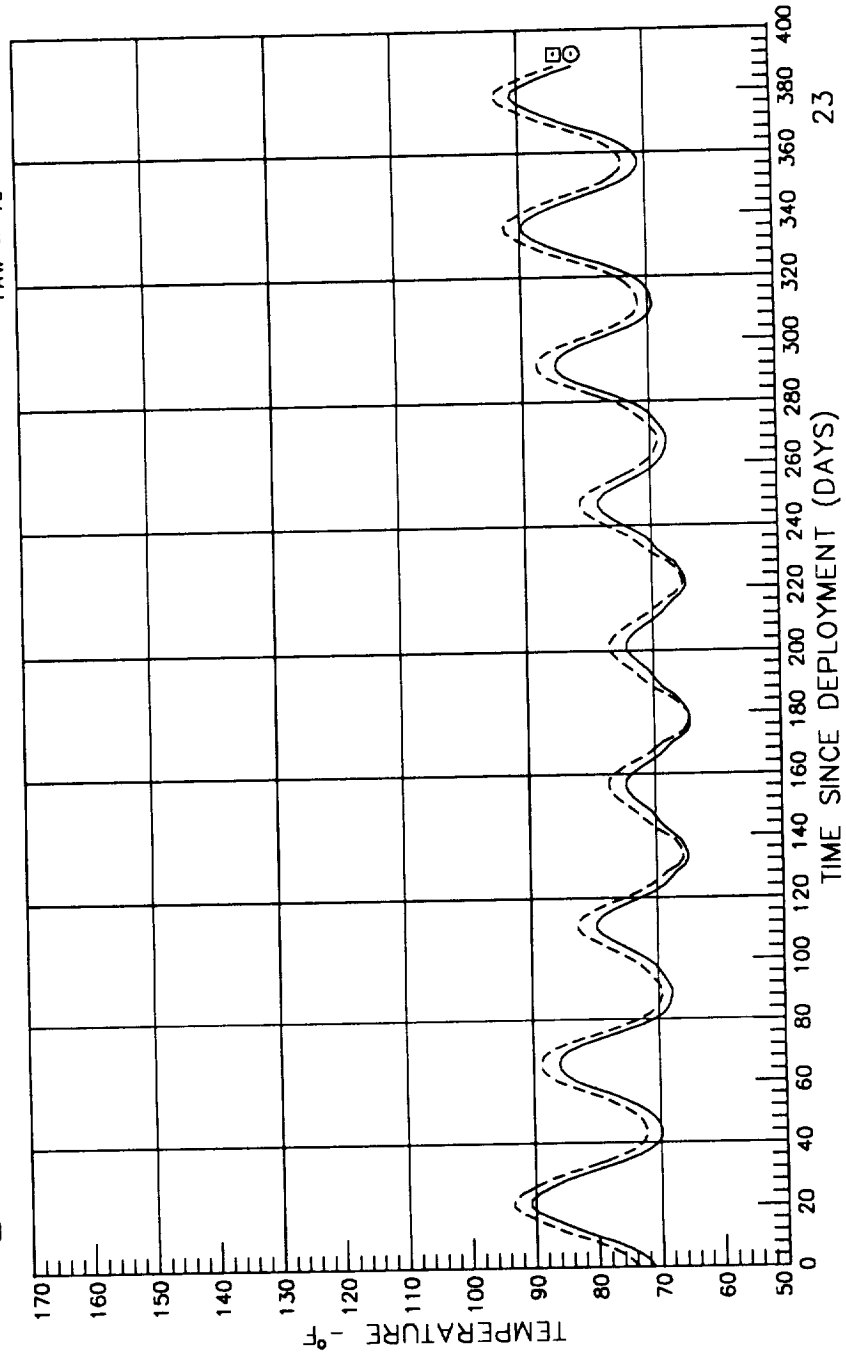
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

52 TRAY  
 142 SURFACE

○ — 52 TRAY  
 □ - - - 142 SURFACE



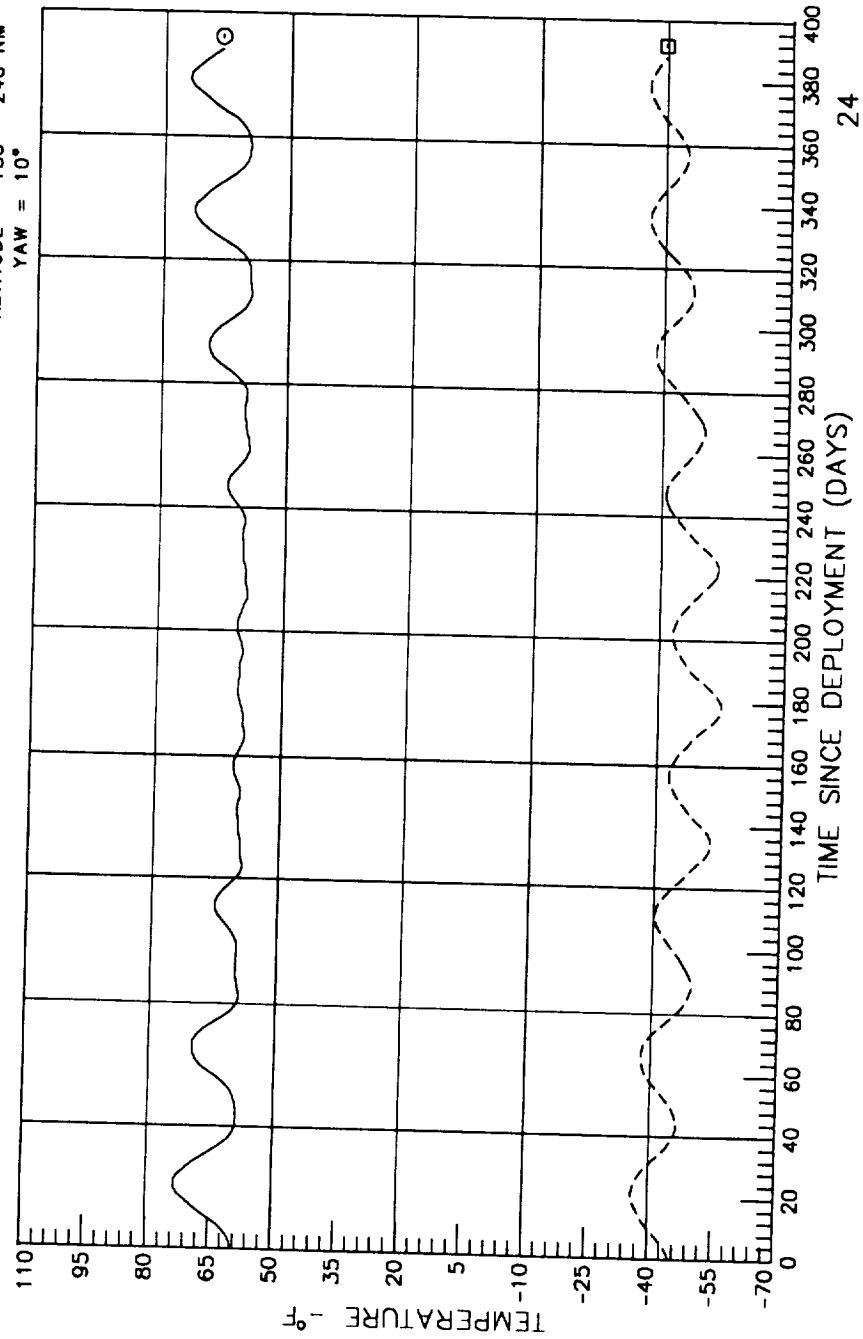
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: F4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

64 TRAY  
 154 SURFACE





# LONG DURATION EXPOSURE FACILITY

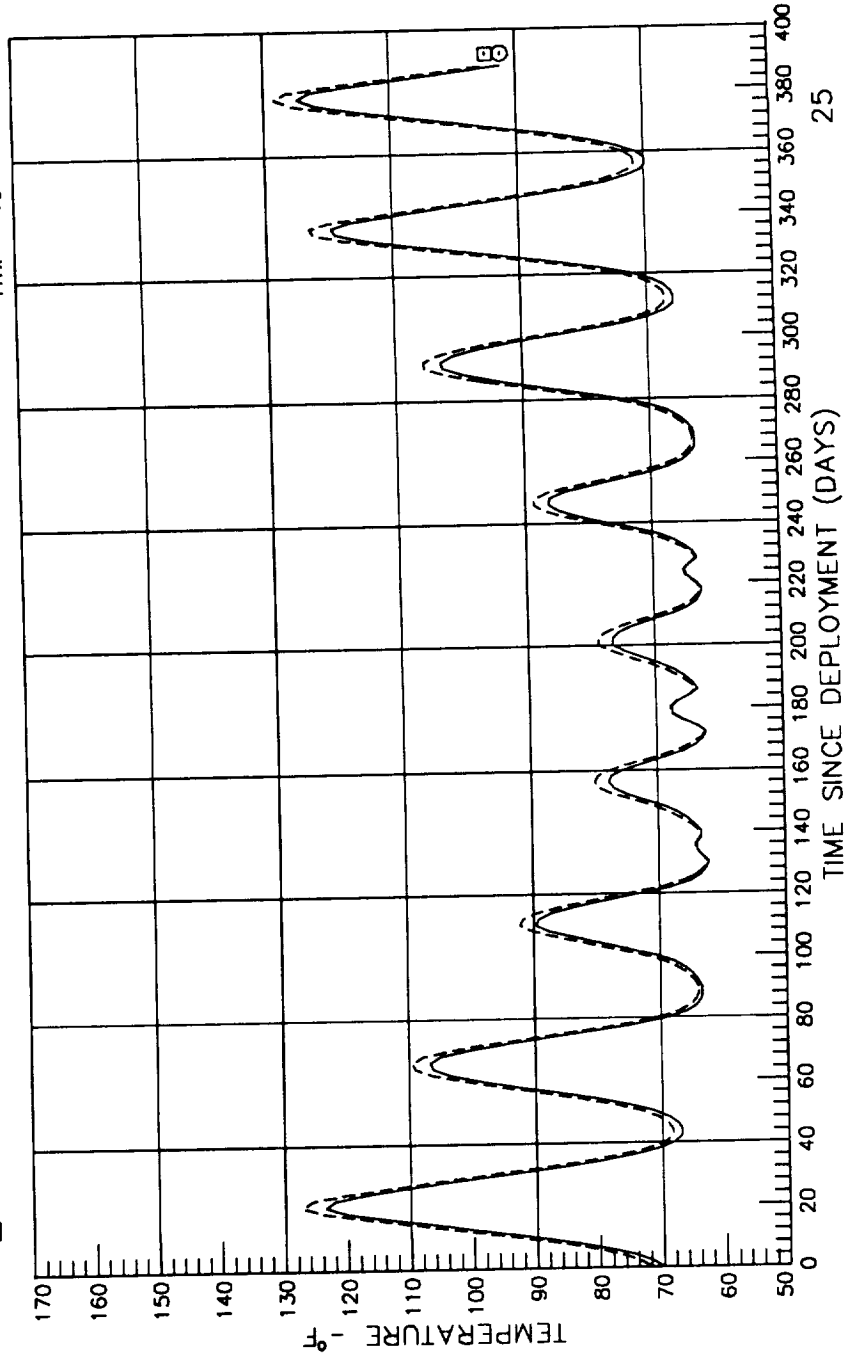
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: A5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

5 TRAY  
 95 SURFACE

○ ———  
 □ - - - -



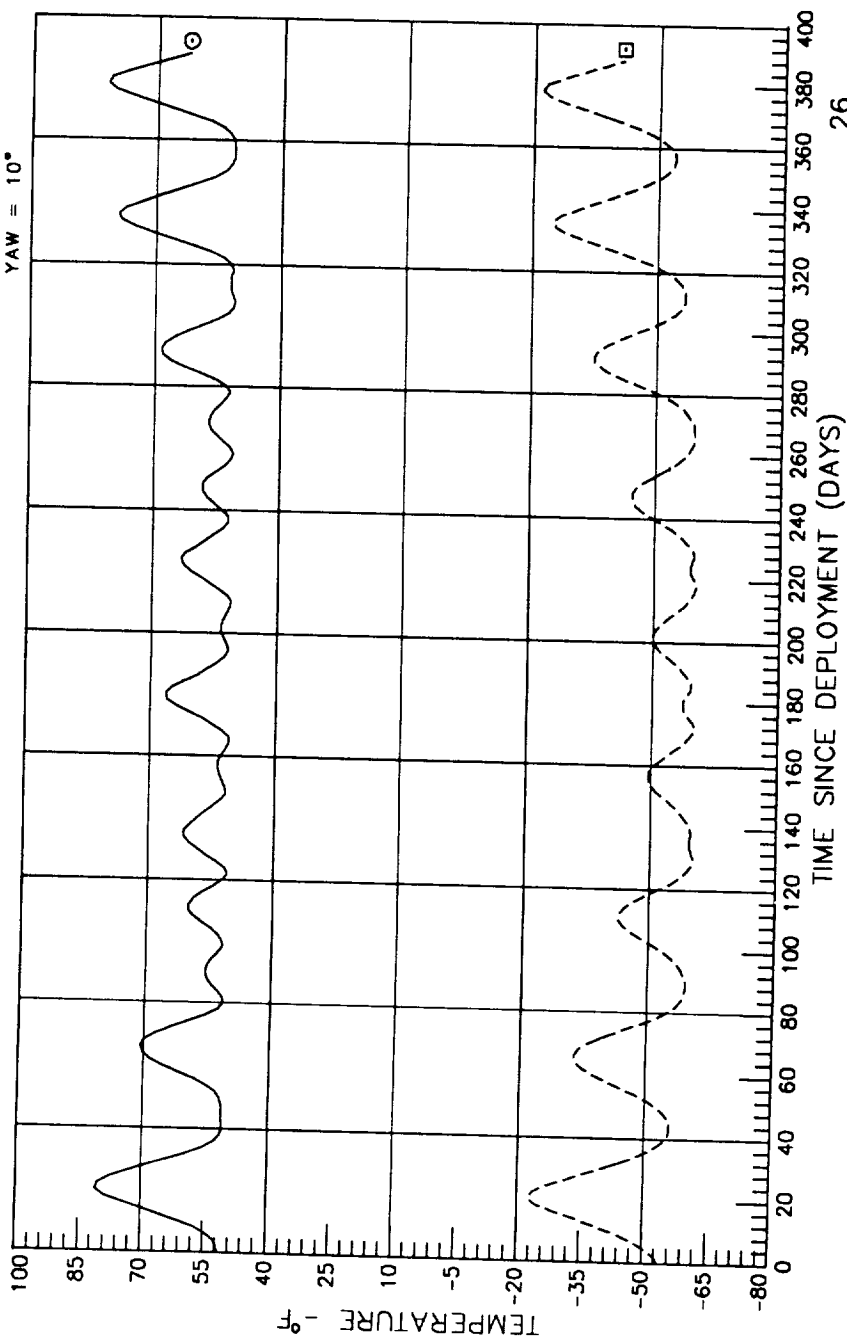
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 17 TRAY  
 □ - - - 107 SURFACE



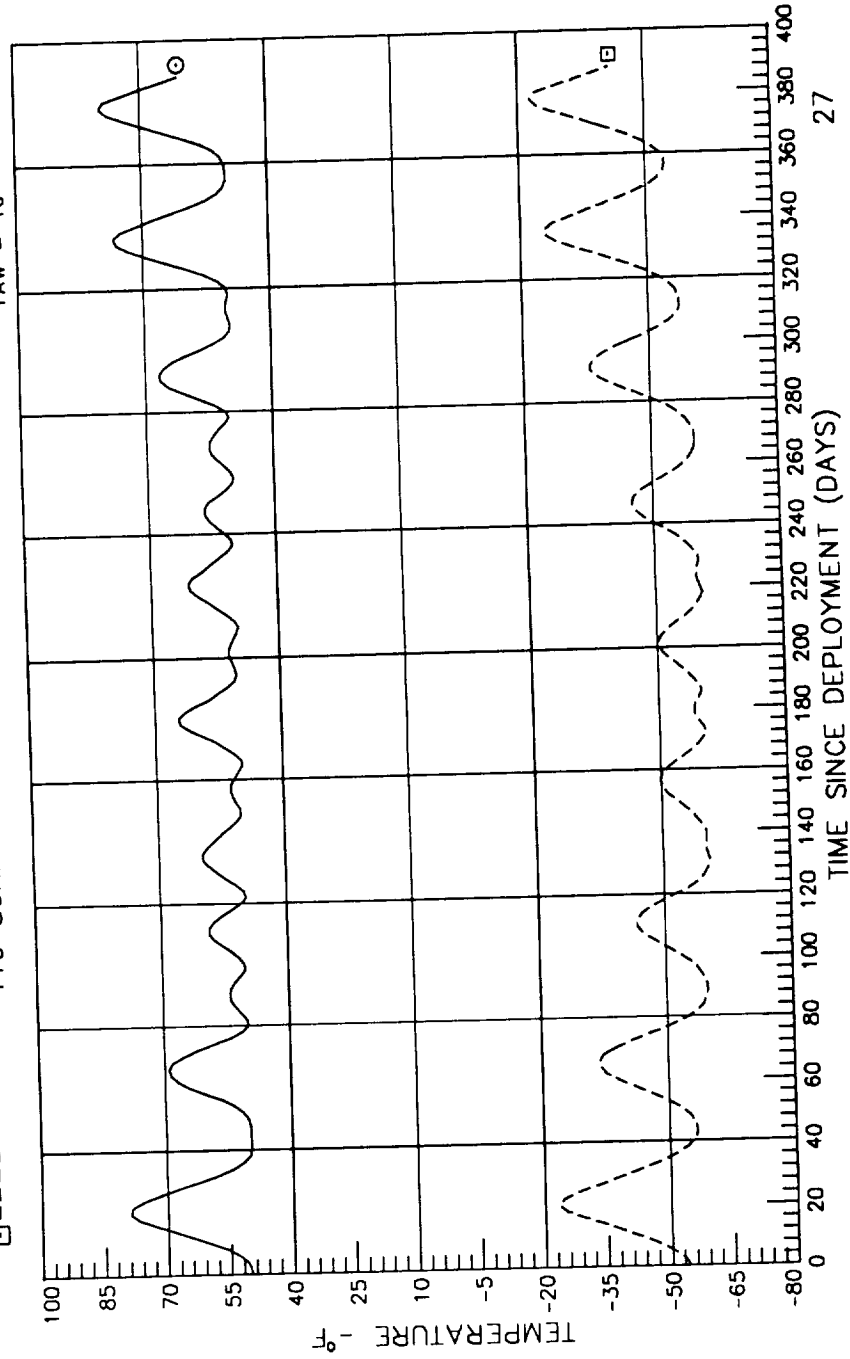
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: C5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 29 TRAY  
 □ 119 SURFACE



# LONG DURATION EXPOSURE FACILITY

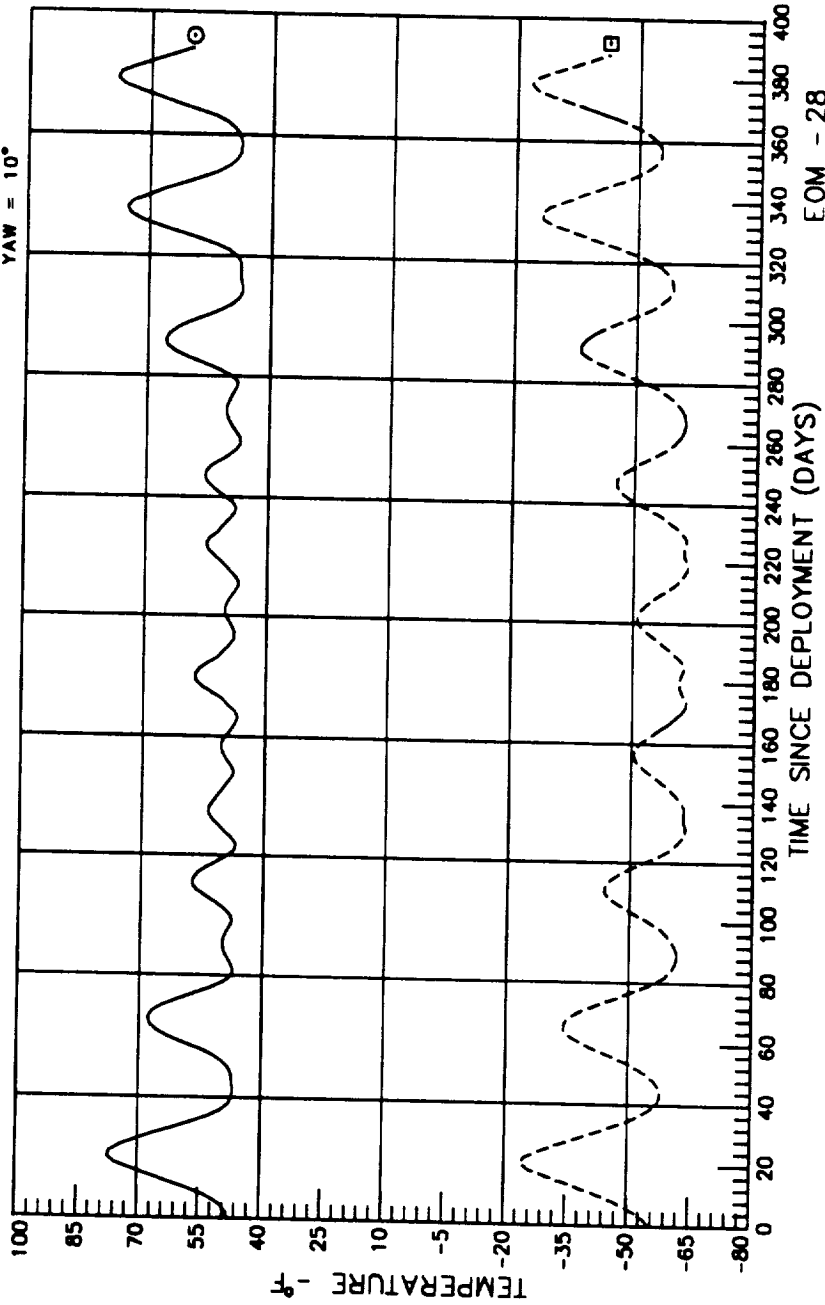
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

41 TRAY  
 131 SURFACE

⊙  
 □



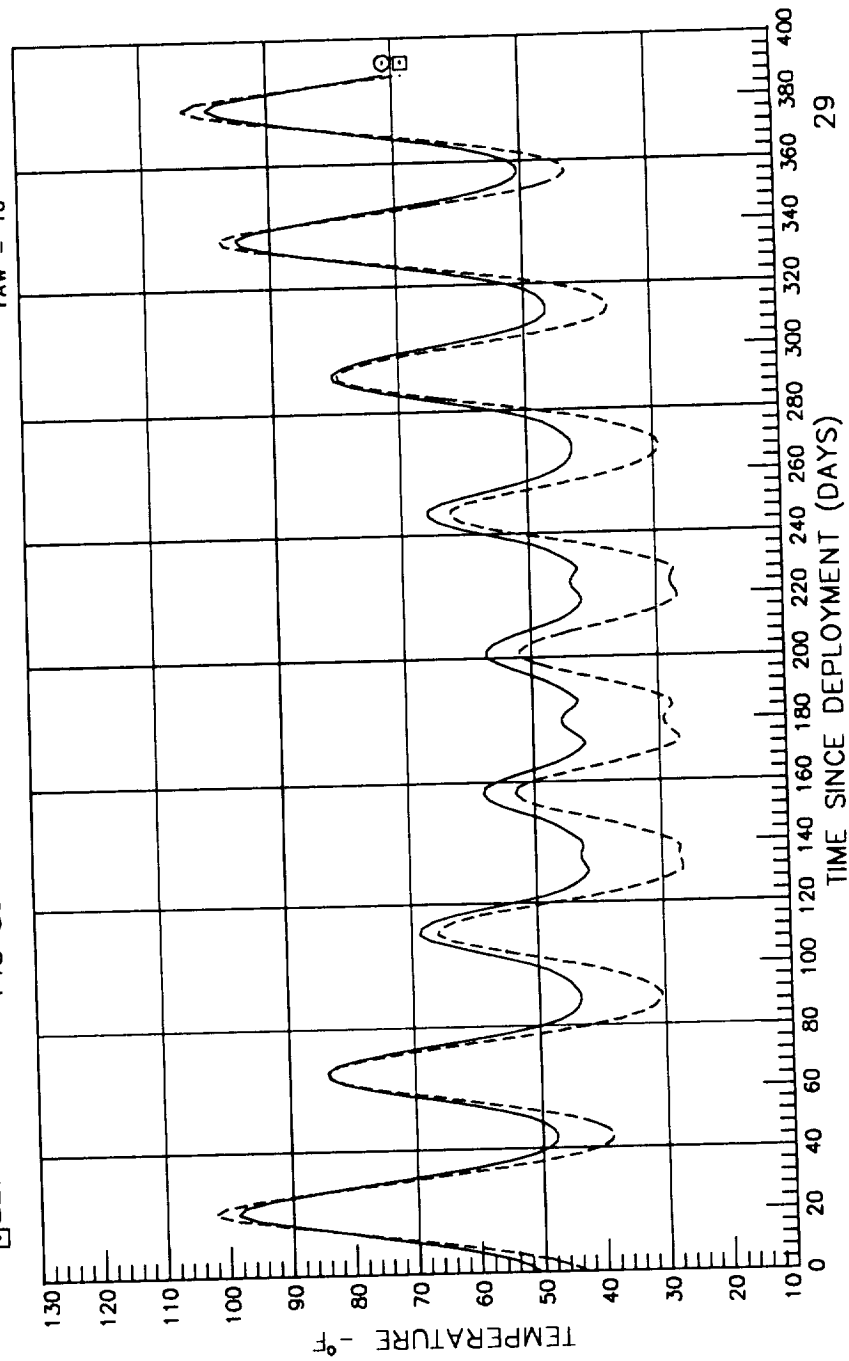
EOM - 28

# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: E5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

53 TRAY  
 143 SURFACE

○  
 □



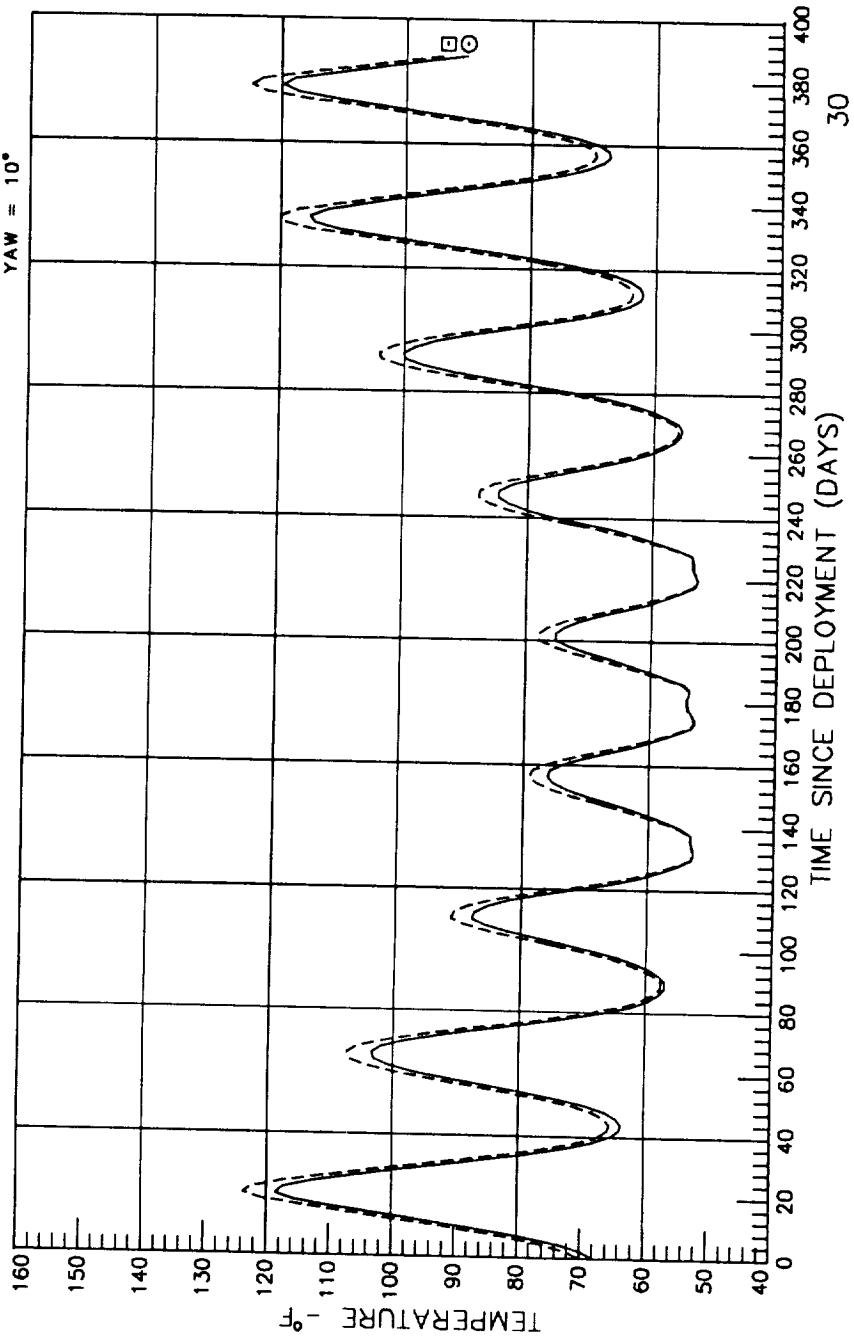
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: F5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○—— 65 TRAY  
 □----- 155 SURFACE



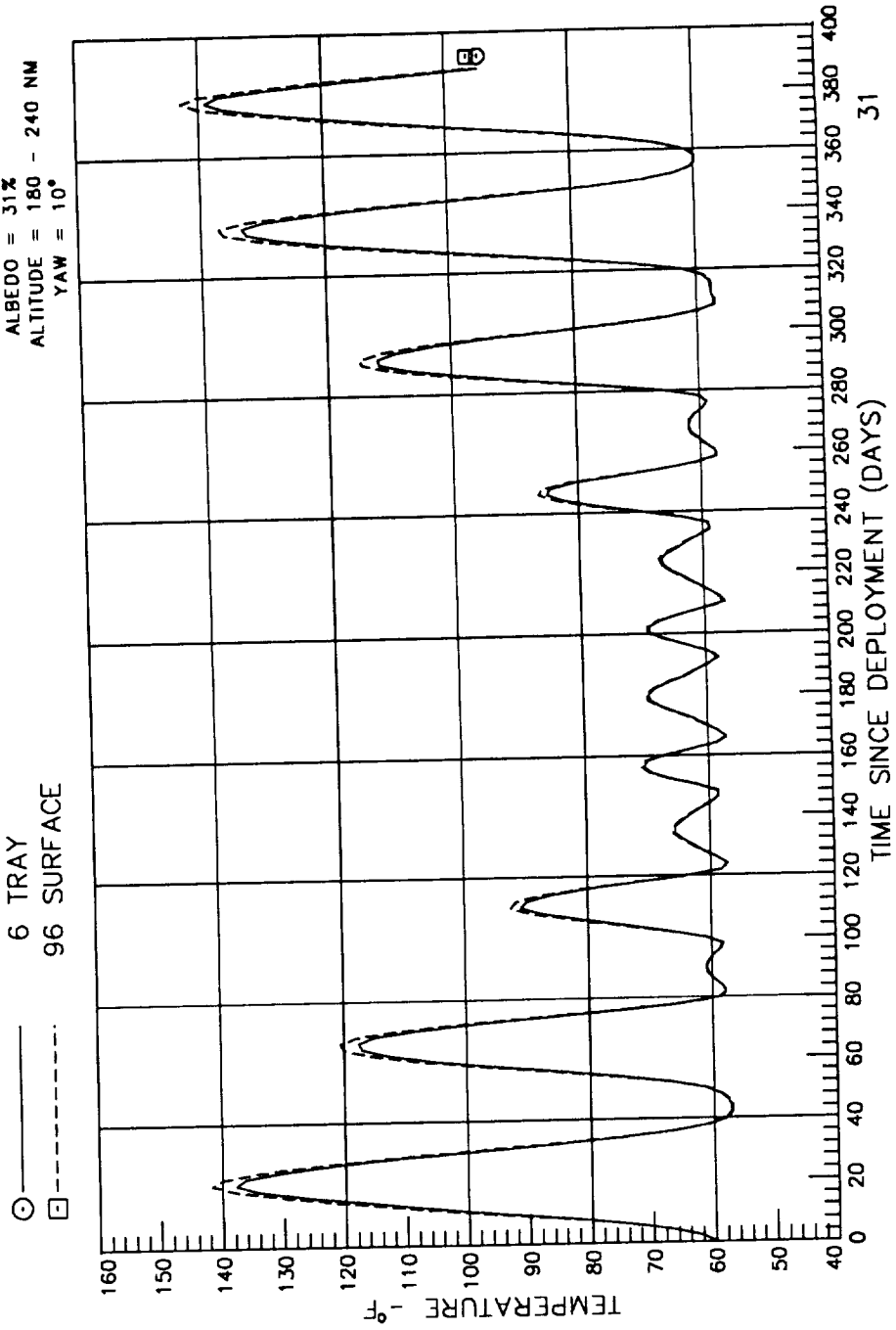
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: A6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

6 TRAY  
 96 SURFACE



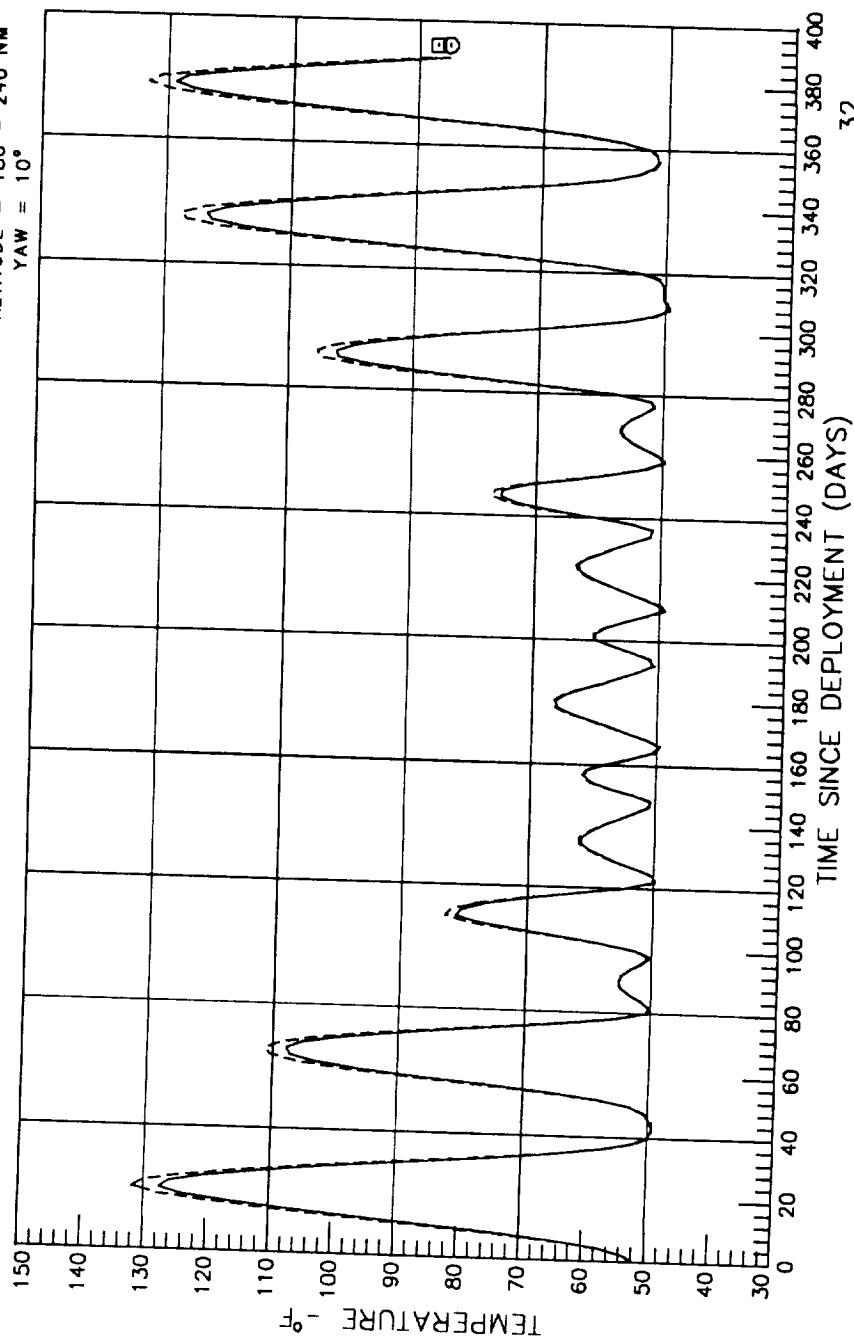
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 18 TRAY  
 □ 108 SURFACE

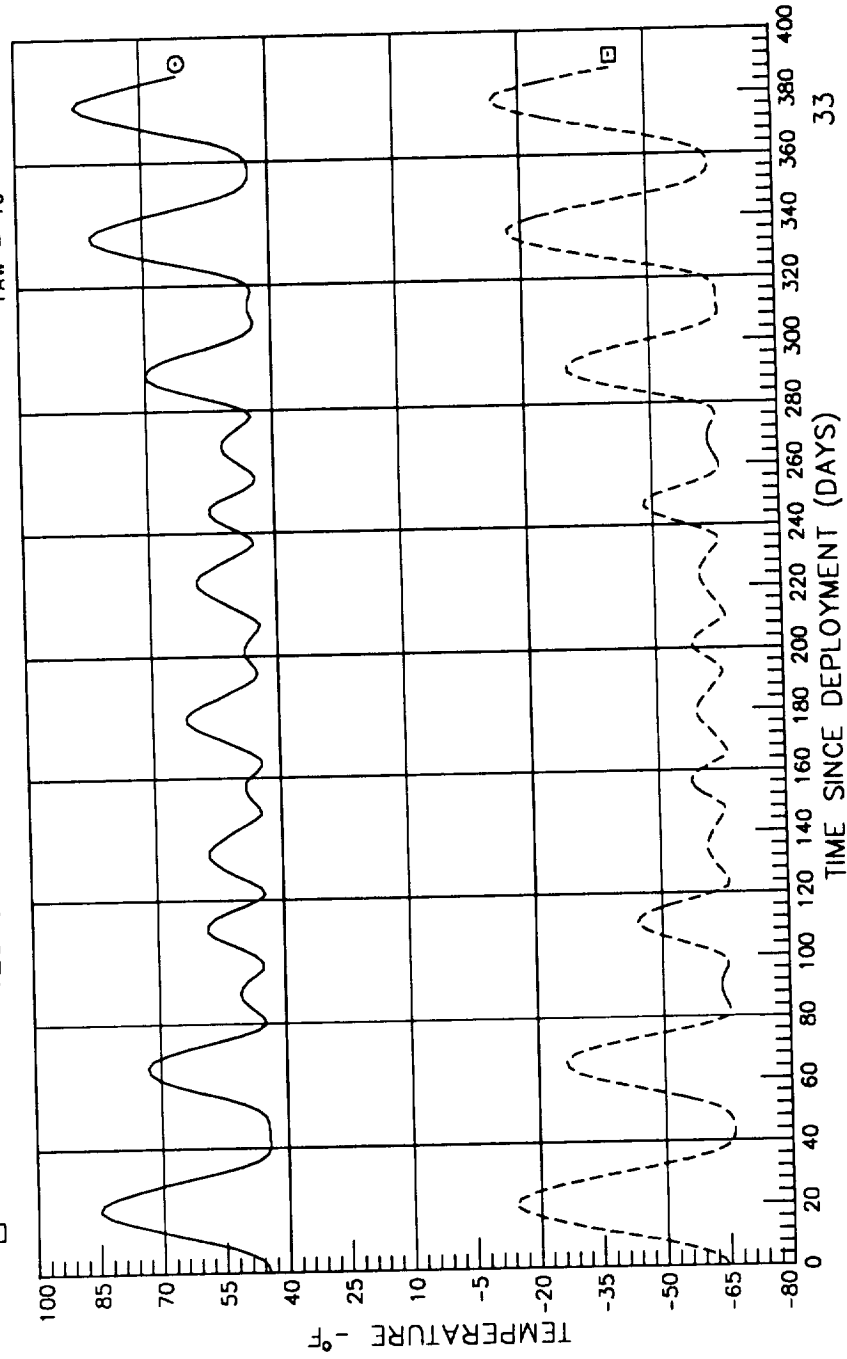




# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: C6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

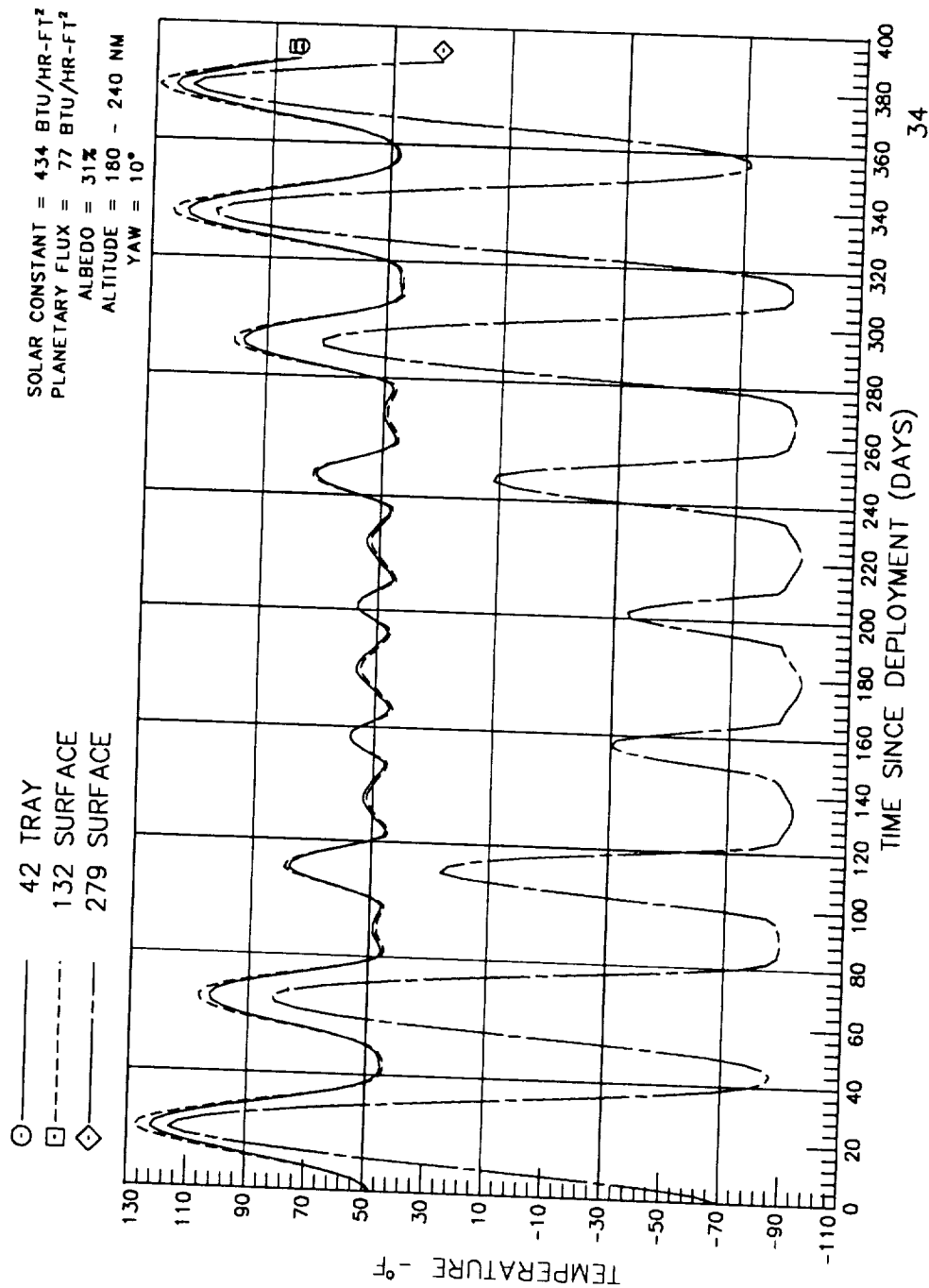
○ 30 TRAY  
 □ 120 SURFACE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D6



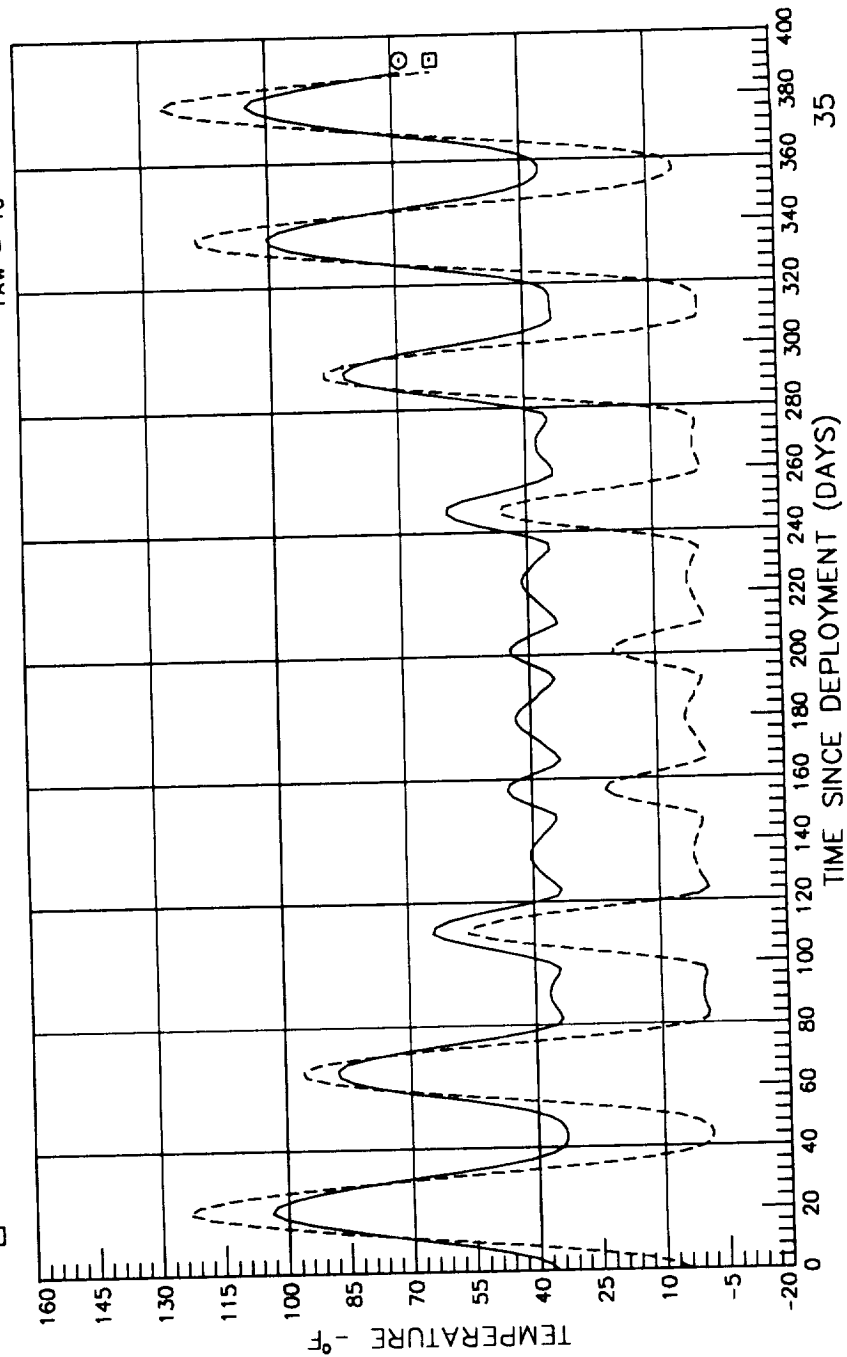
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: E6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°

54 TRAY  
144 SURFACE

○  
□



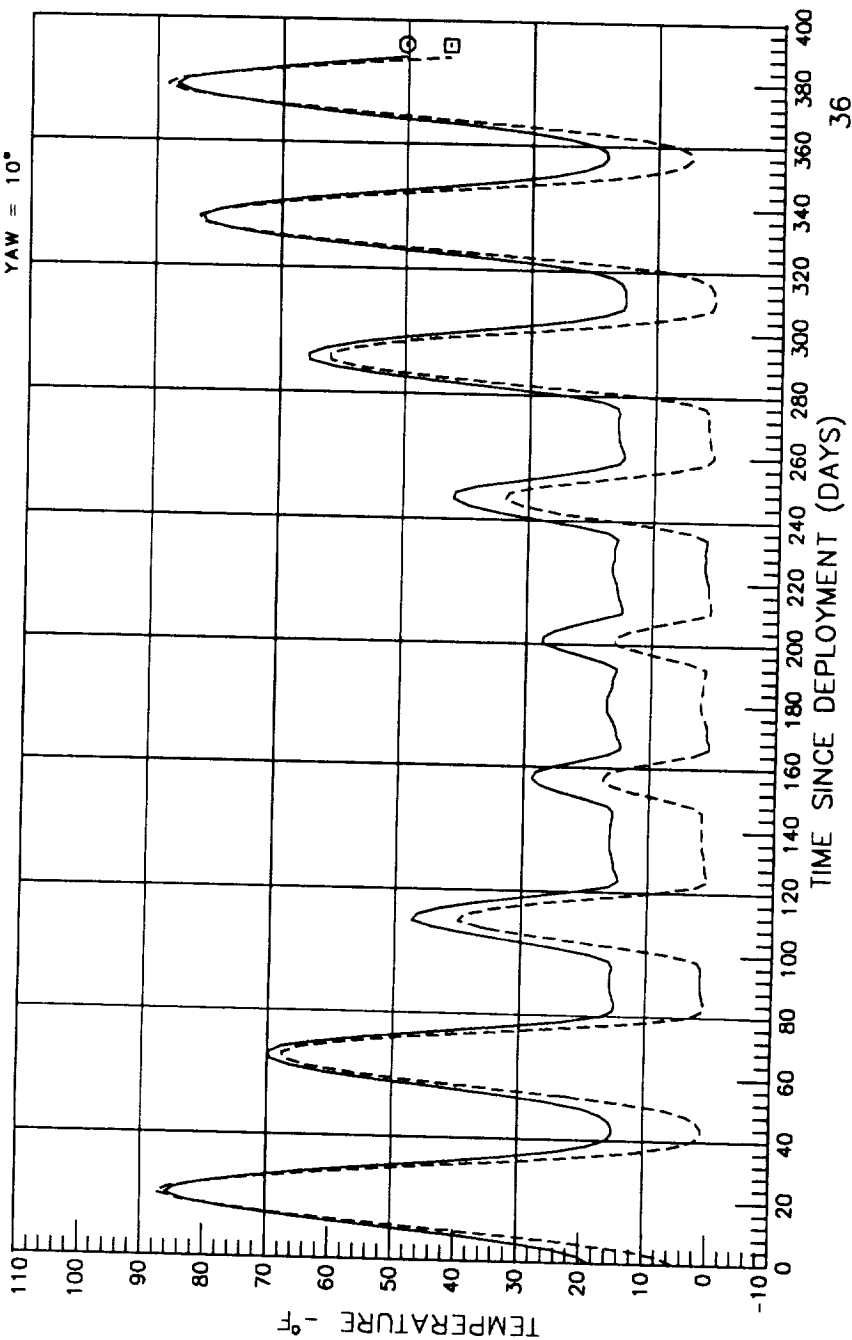
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: F6

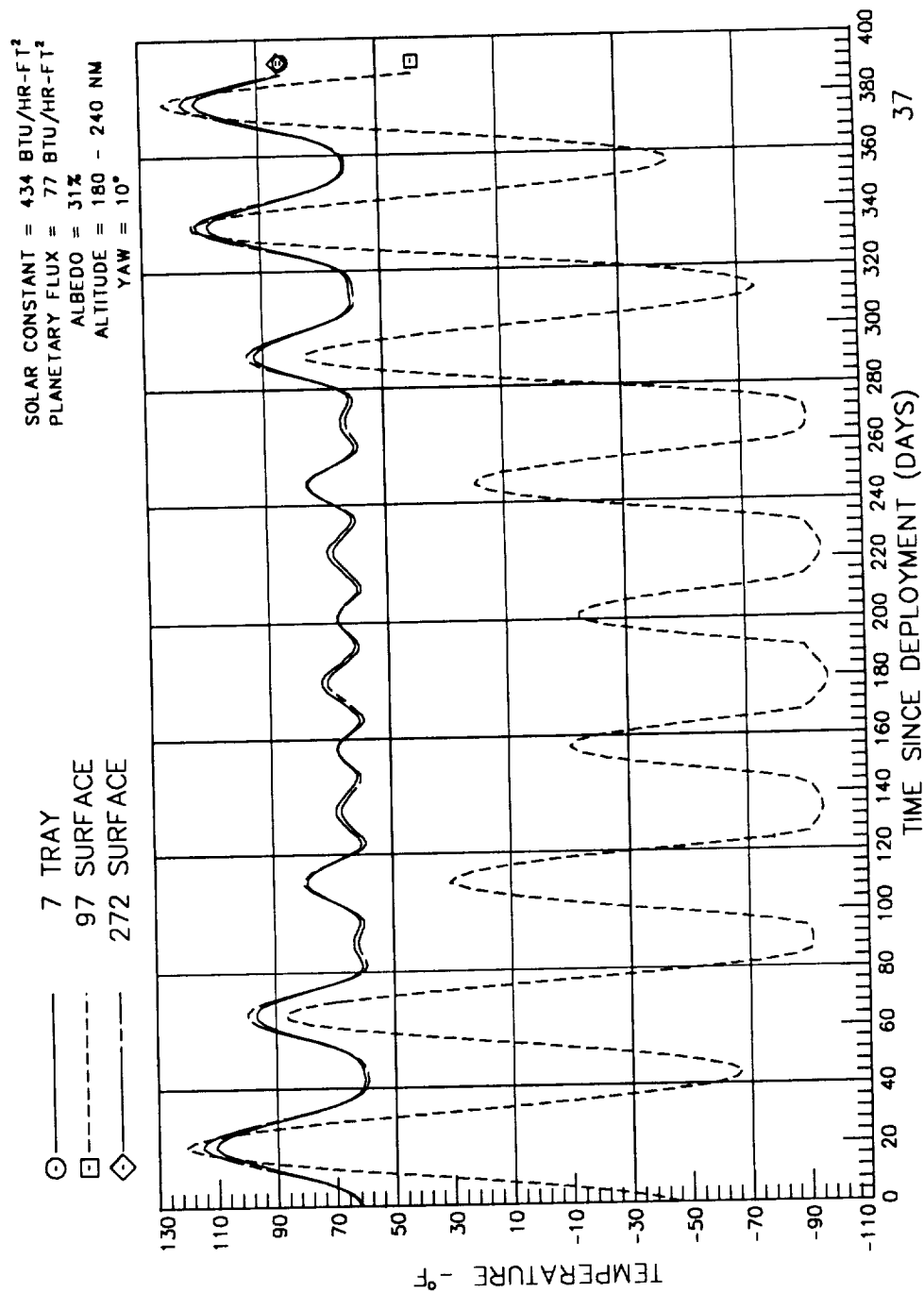
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 66 TRAY  
 □ - - - 156 SURFACE



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: A7

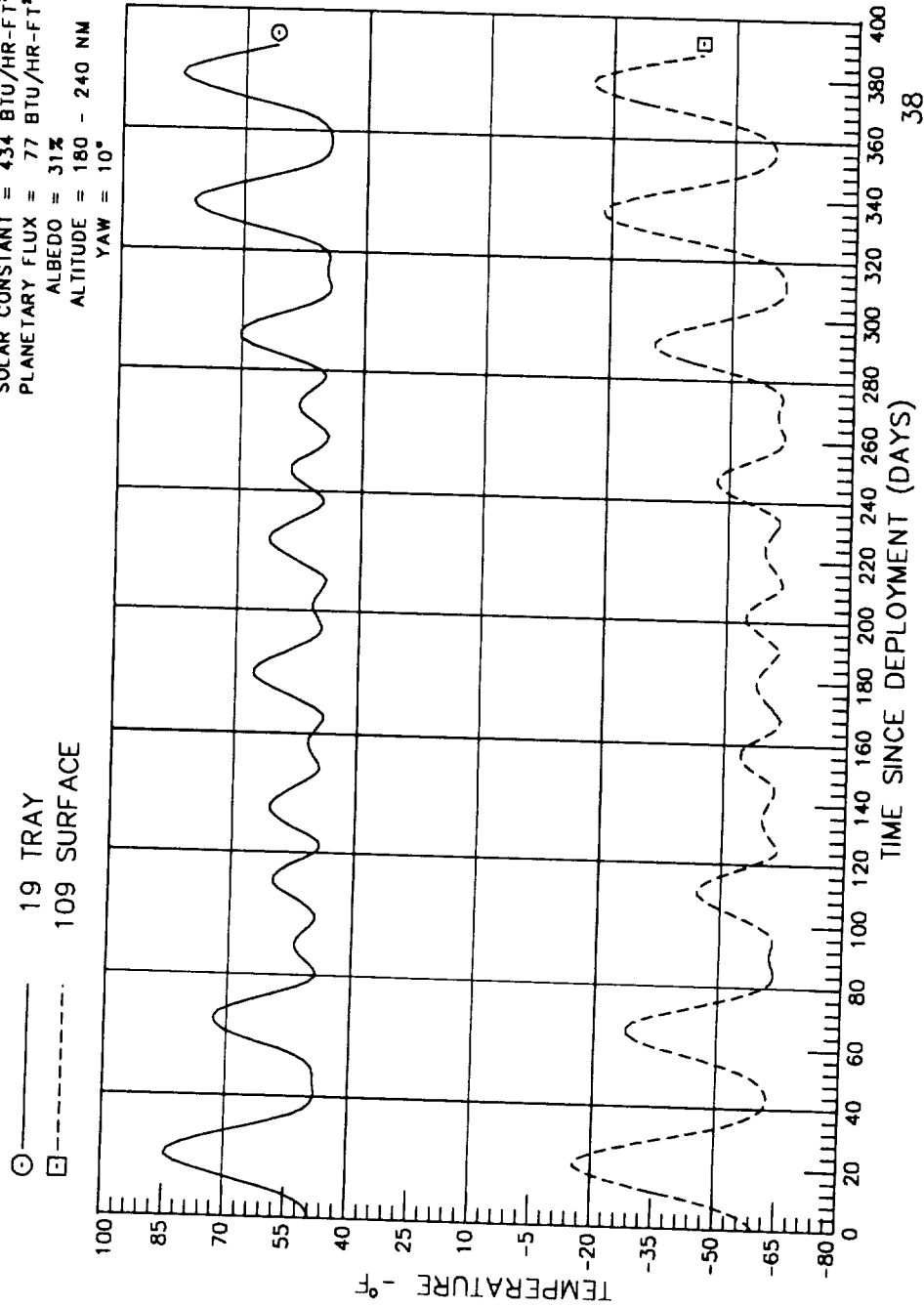


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



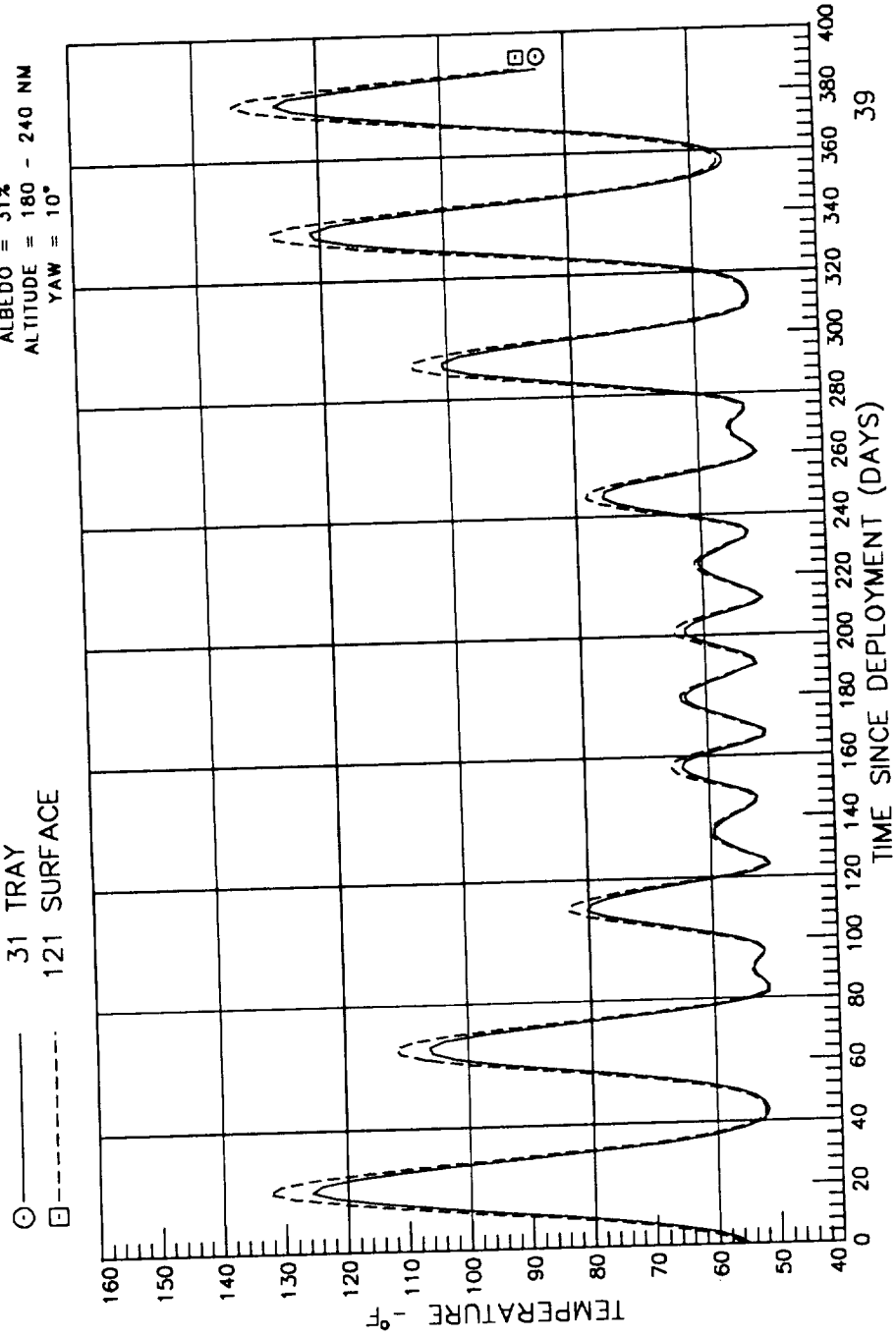
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: C7

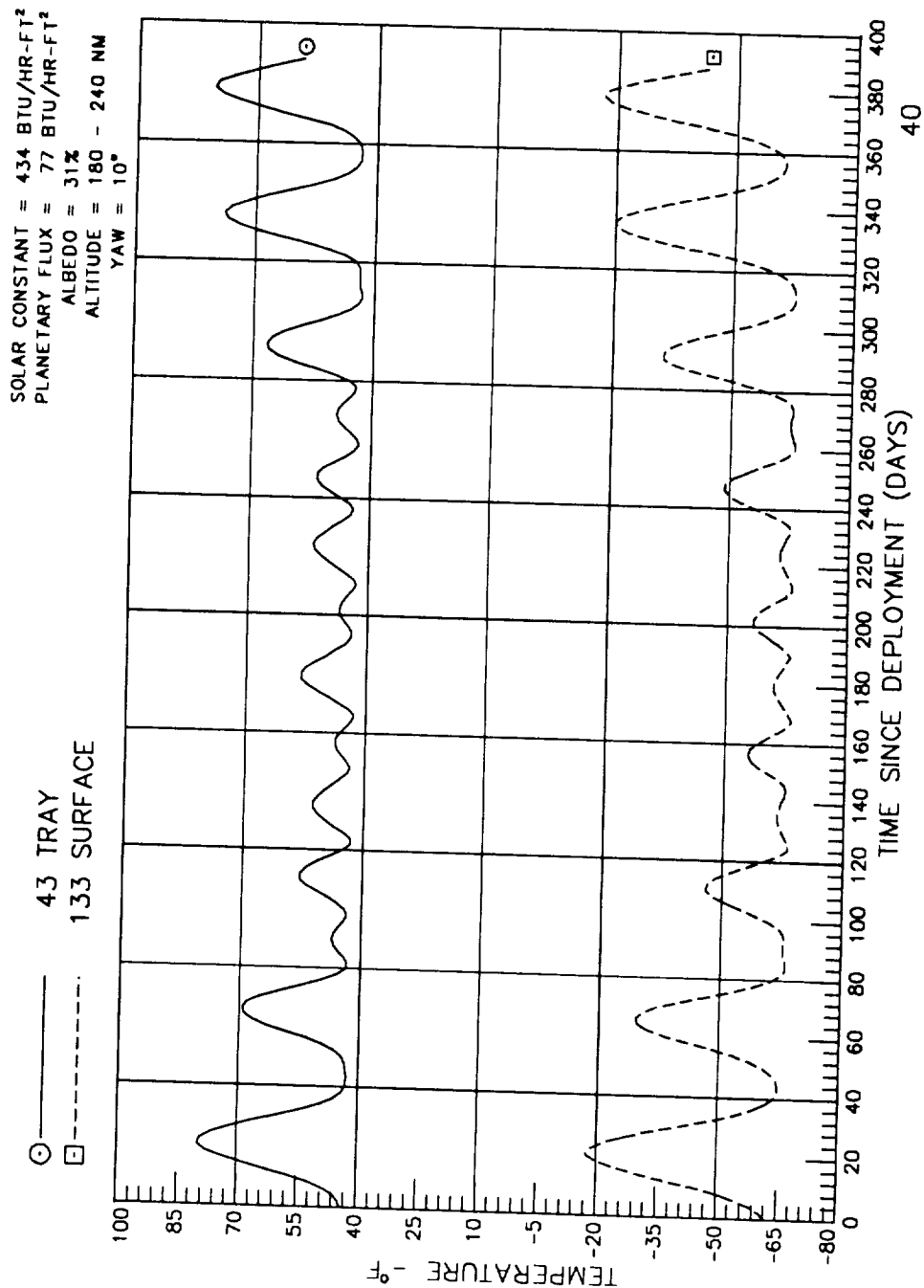
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

31 TRAY  
 121 SURFACE



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: D7





# LONG DURATION EXPOSURE FACILITY

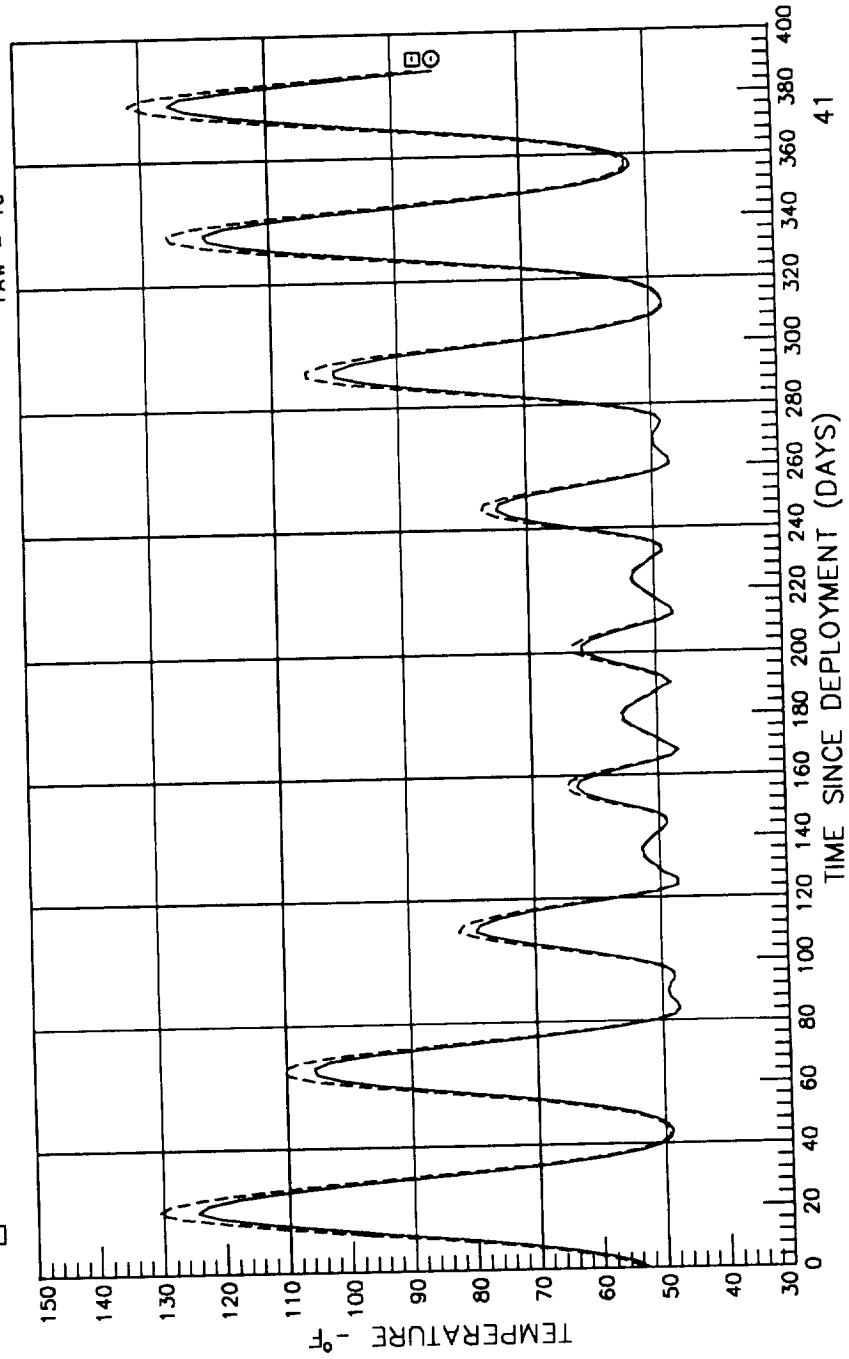
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

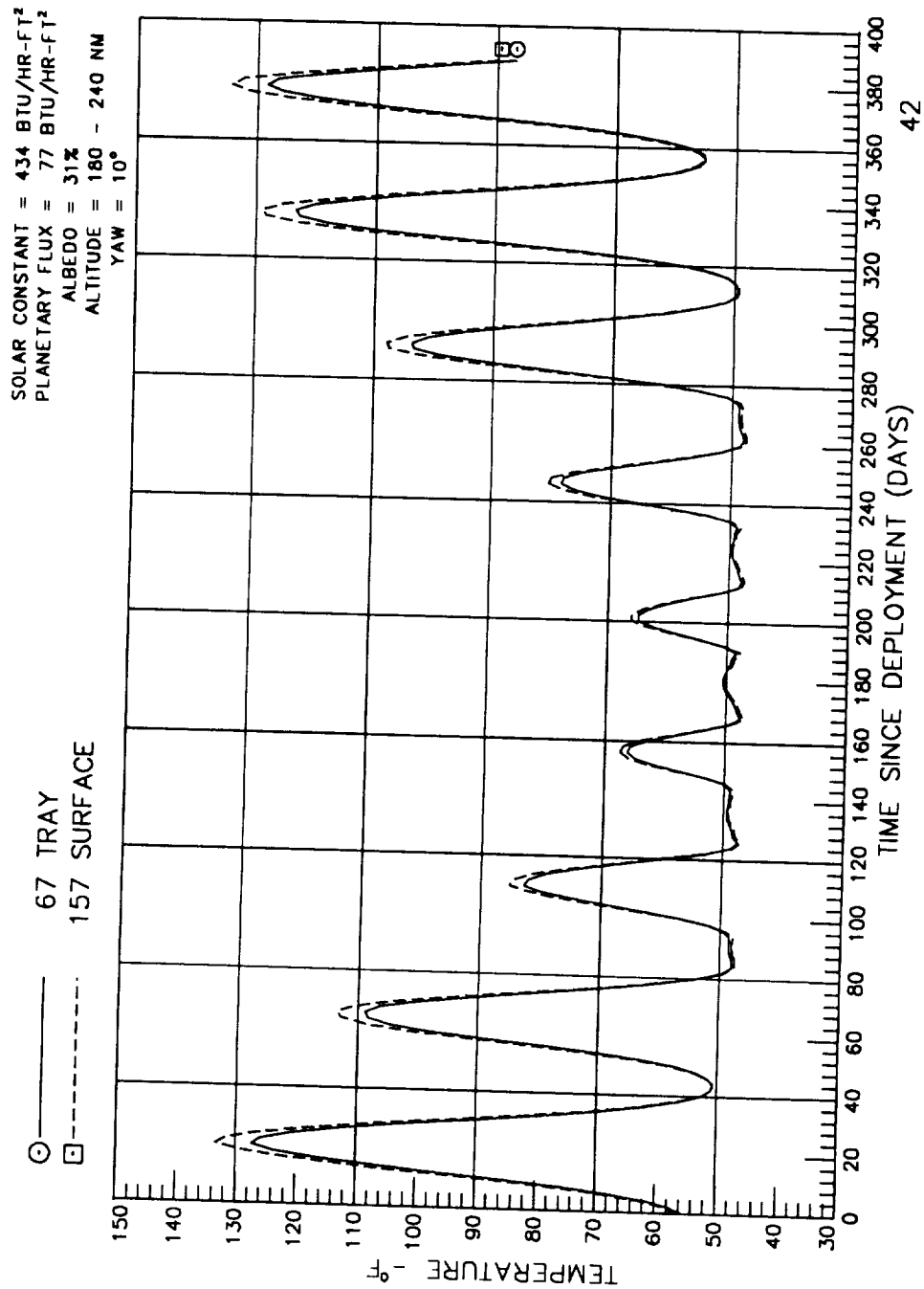
55 TRAY  
 145 SURFACE

○  
 □



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: F7



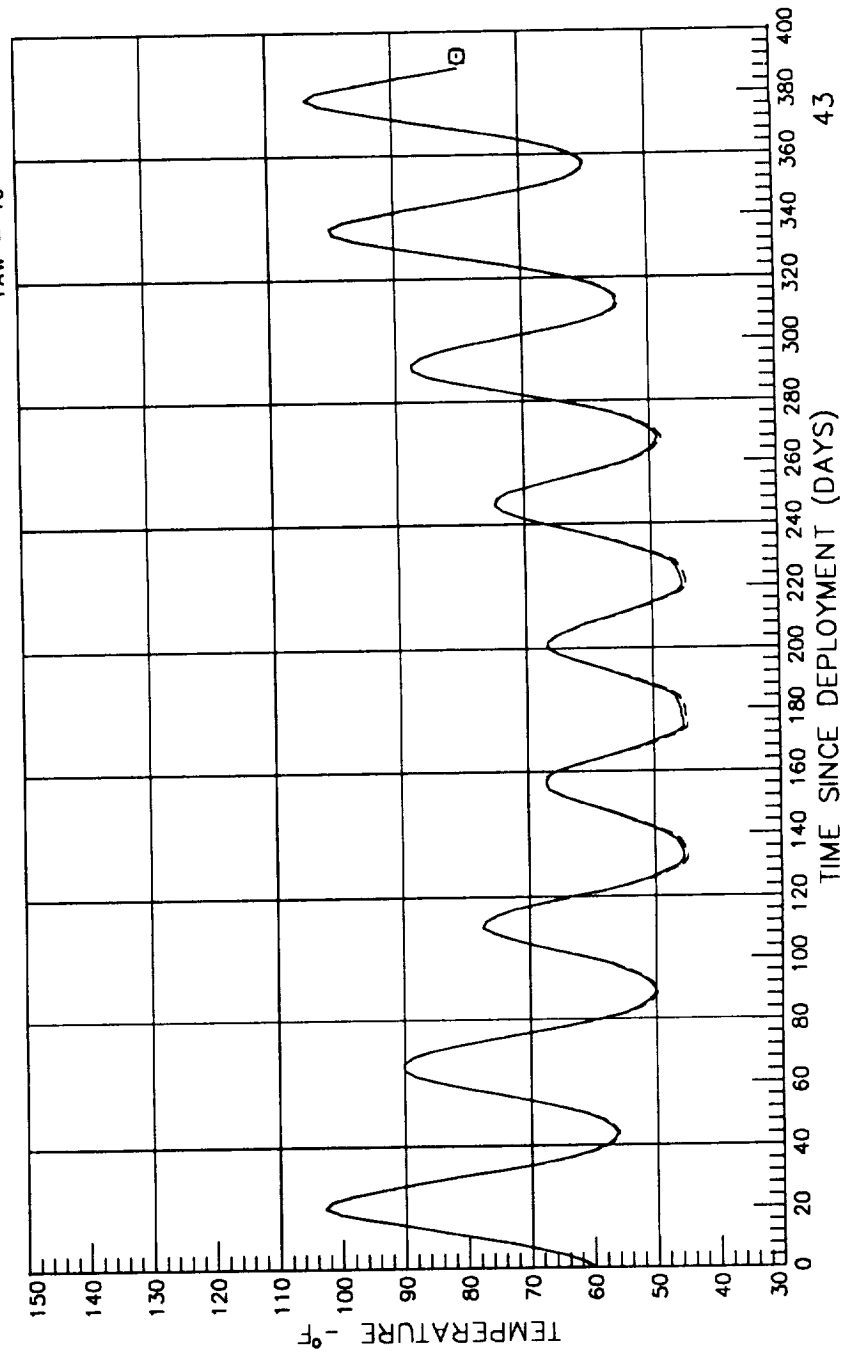
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: A8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 8 TRAY  
 □ - - - 98 SURFACE

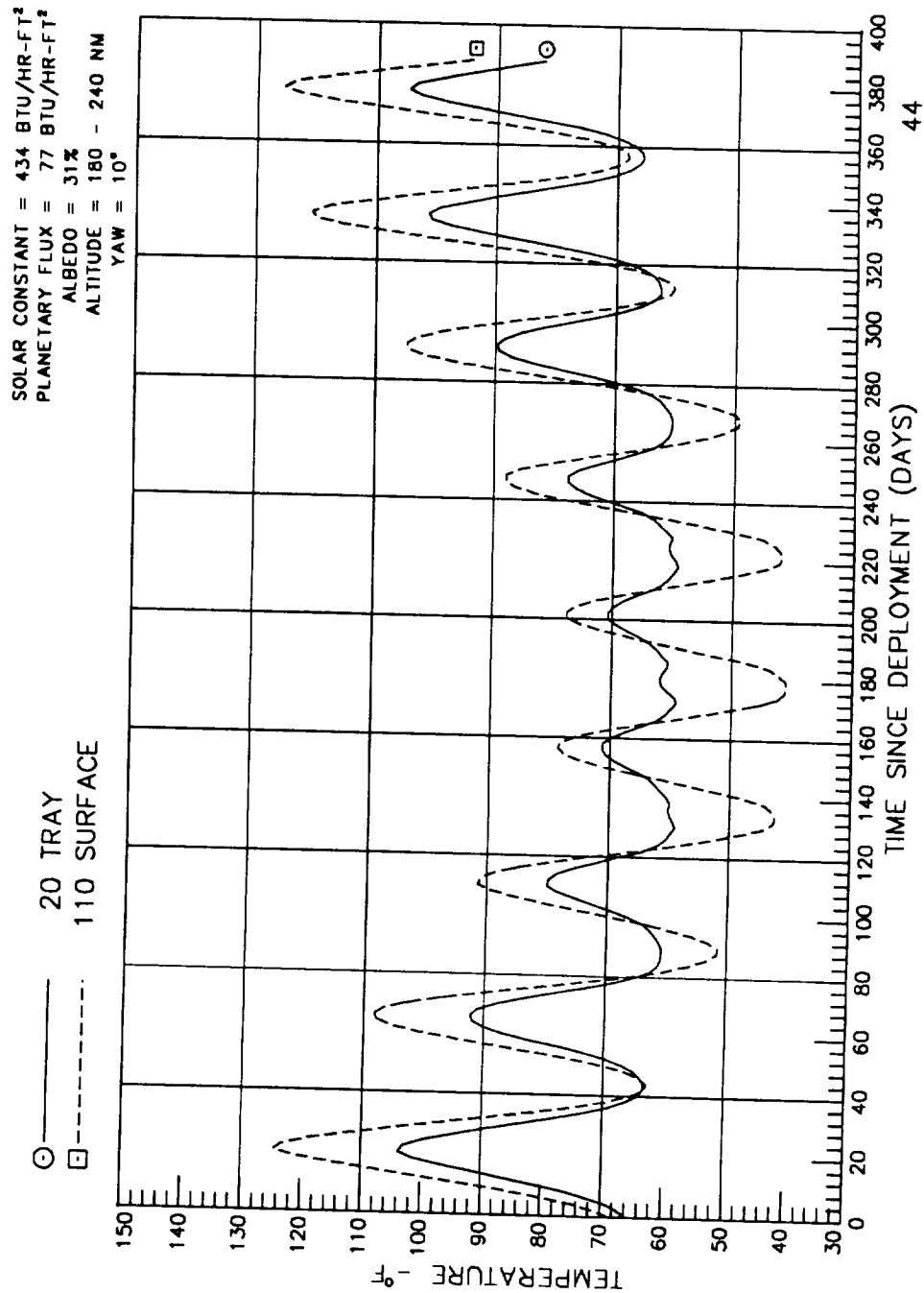


4.3

# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B8

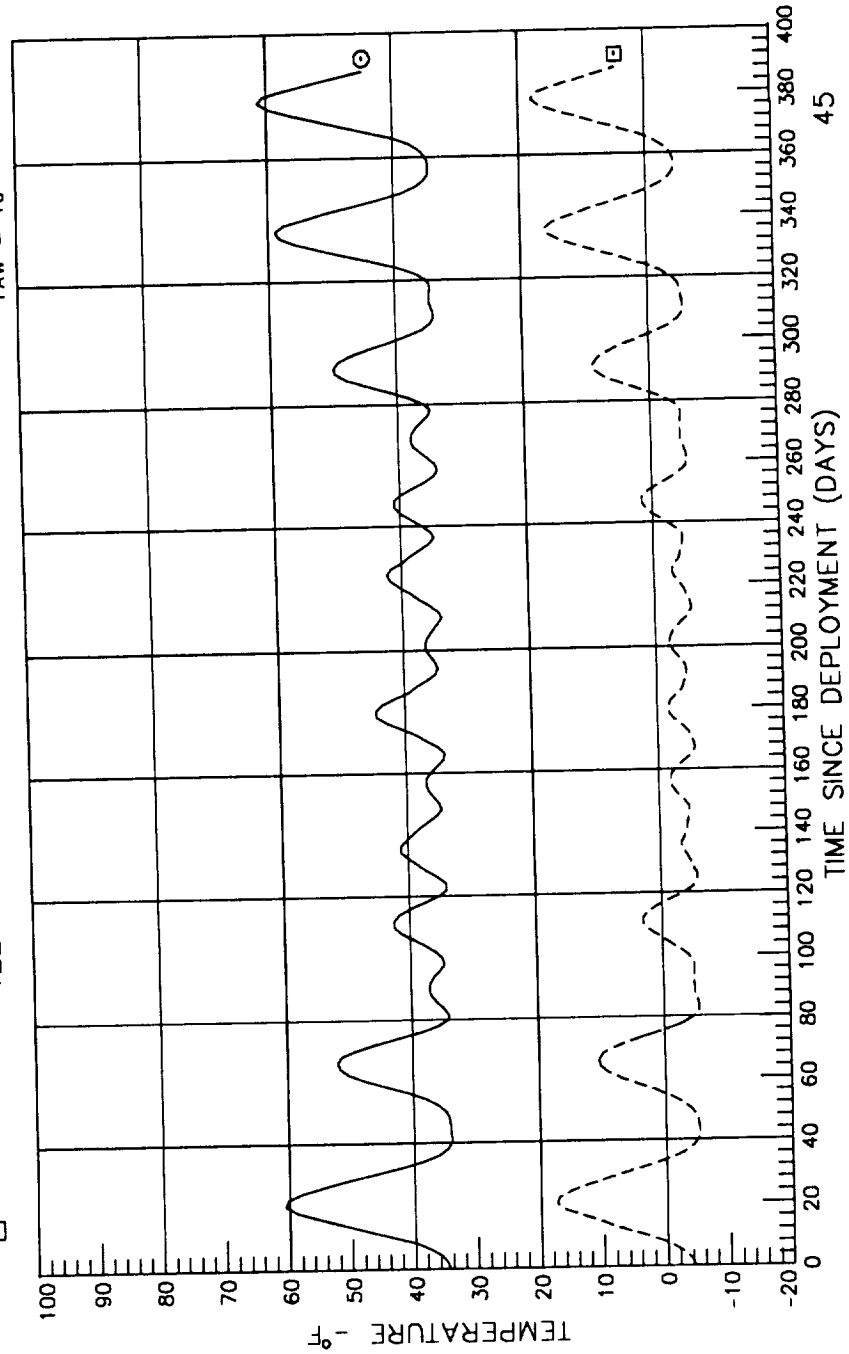


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: C8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°

○ 32 TRAY  
□ 122 SURFACE



# LONG DURATION EXPOSURE FACILITY

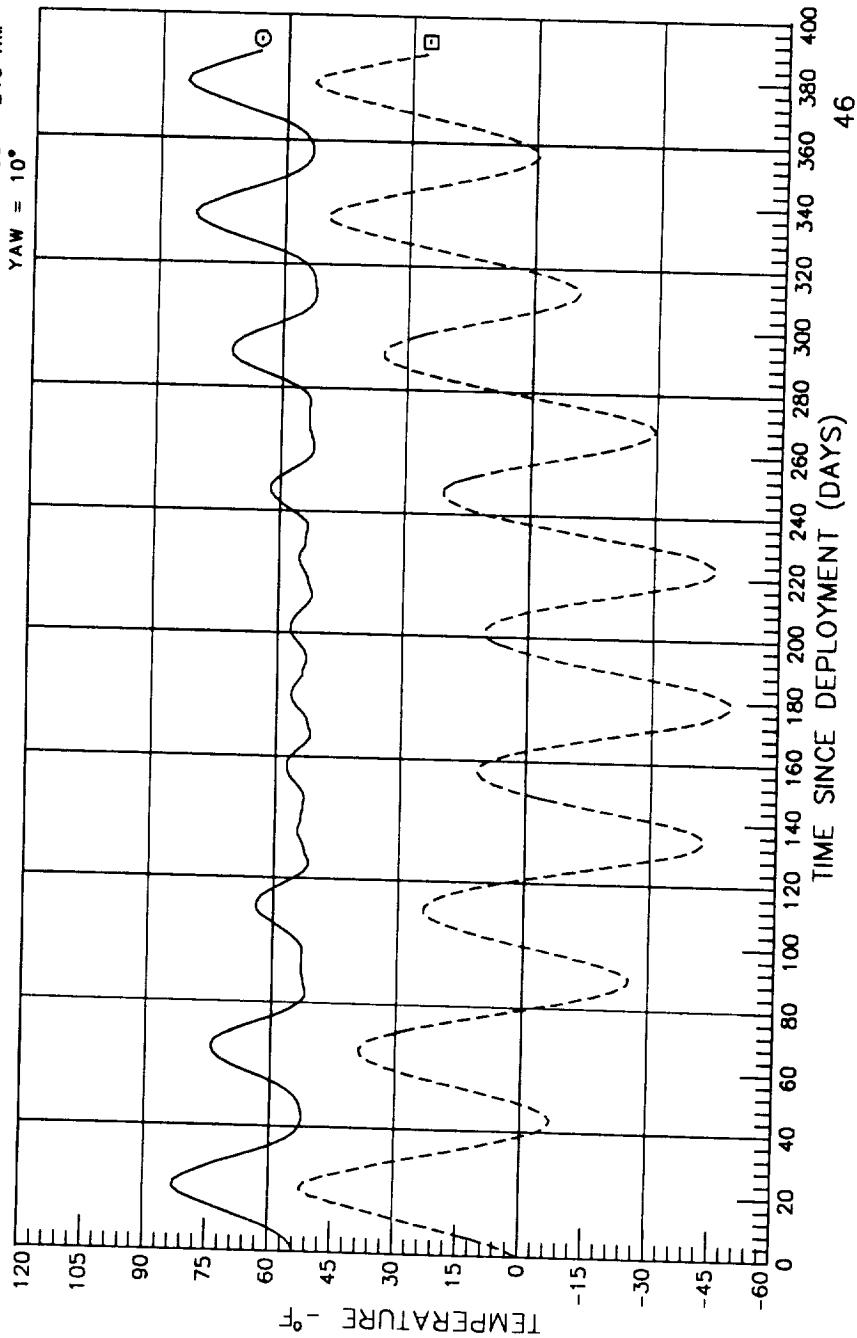
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

44 TRAY  
 134 SURFACE

○ ———  
 □ - - - -



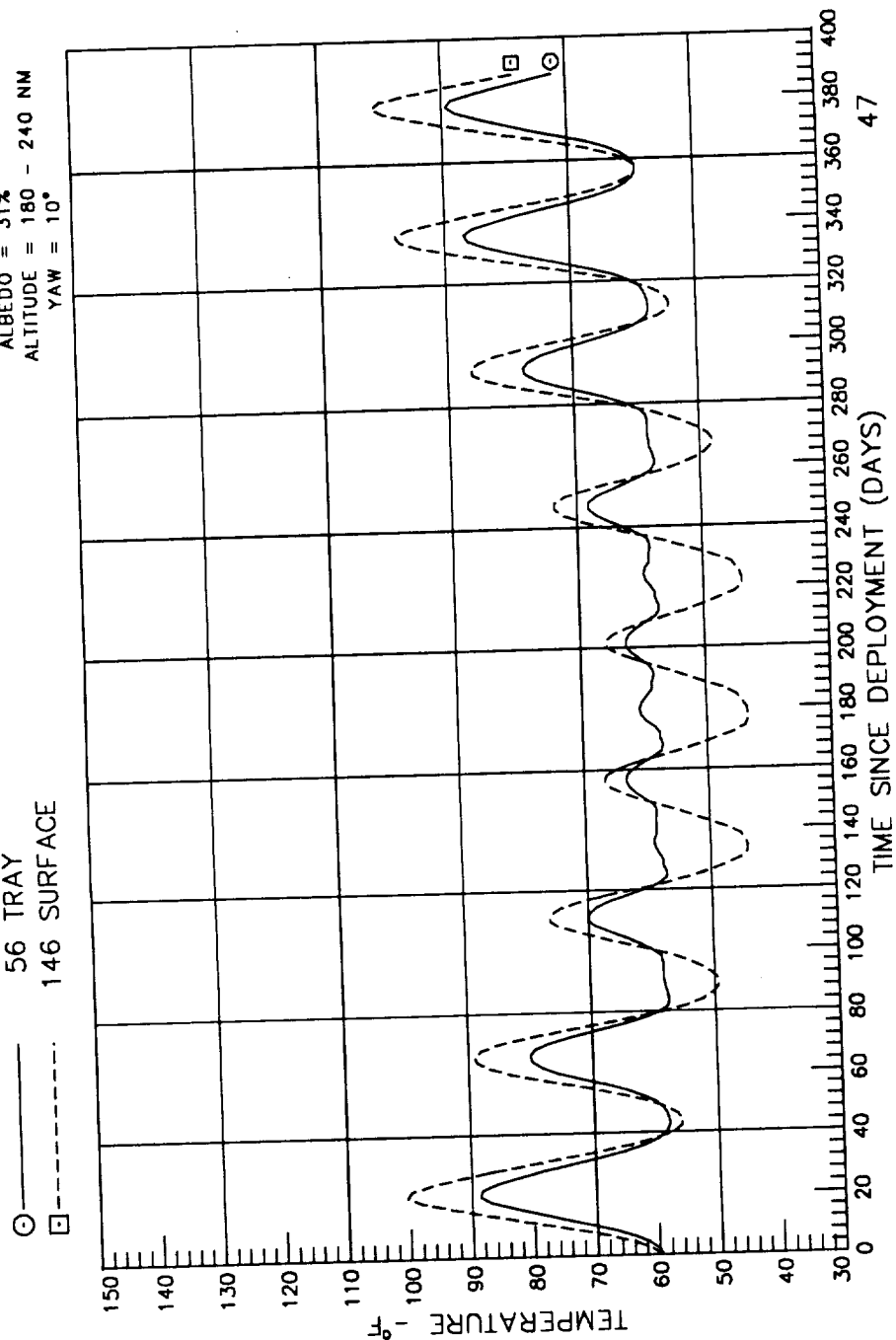
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

56 TRAY  
 146 SURFACE



# LONG DURATION EXPOSURE FACILITY

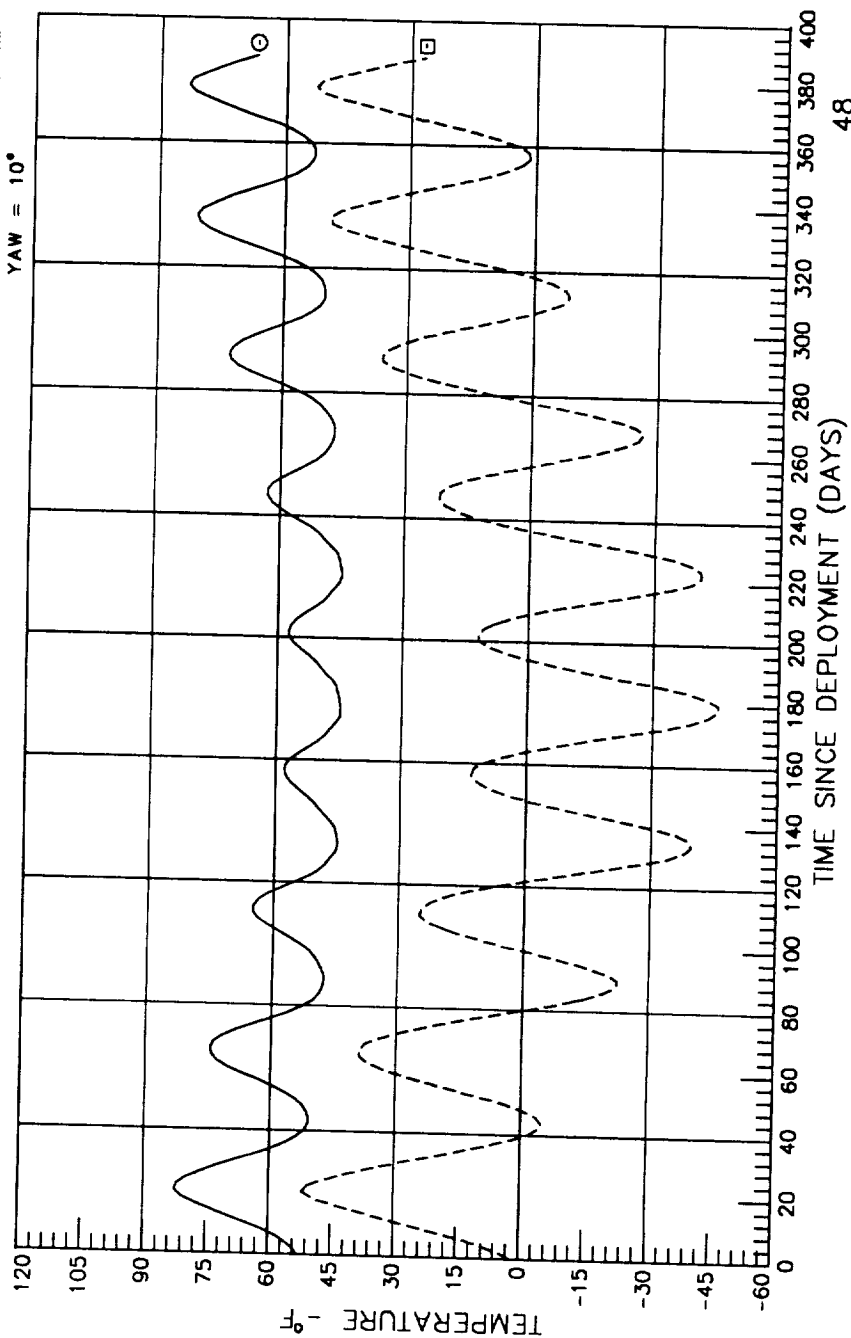
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: F8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

68 TRAY  
 158 SURFACE

⊙  
 □





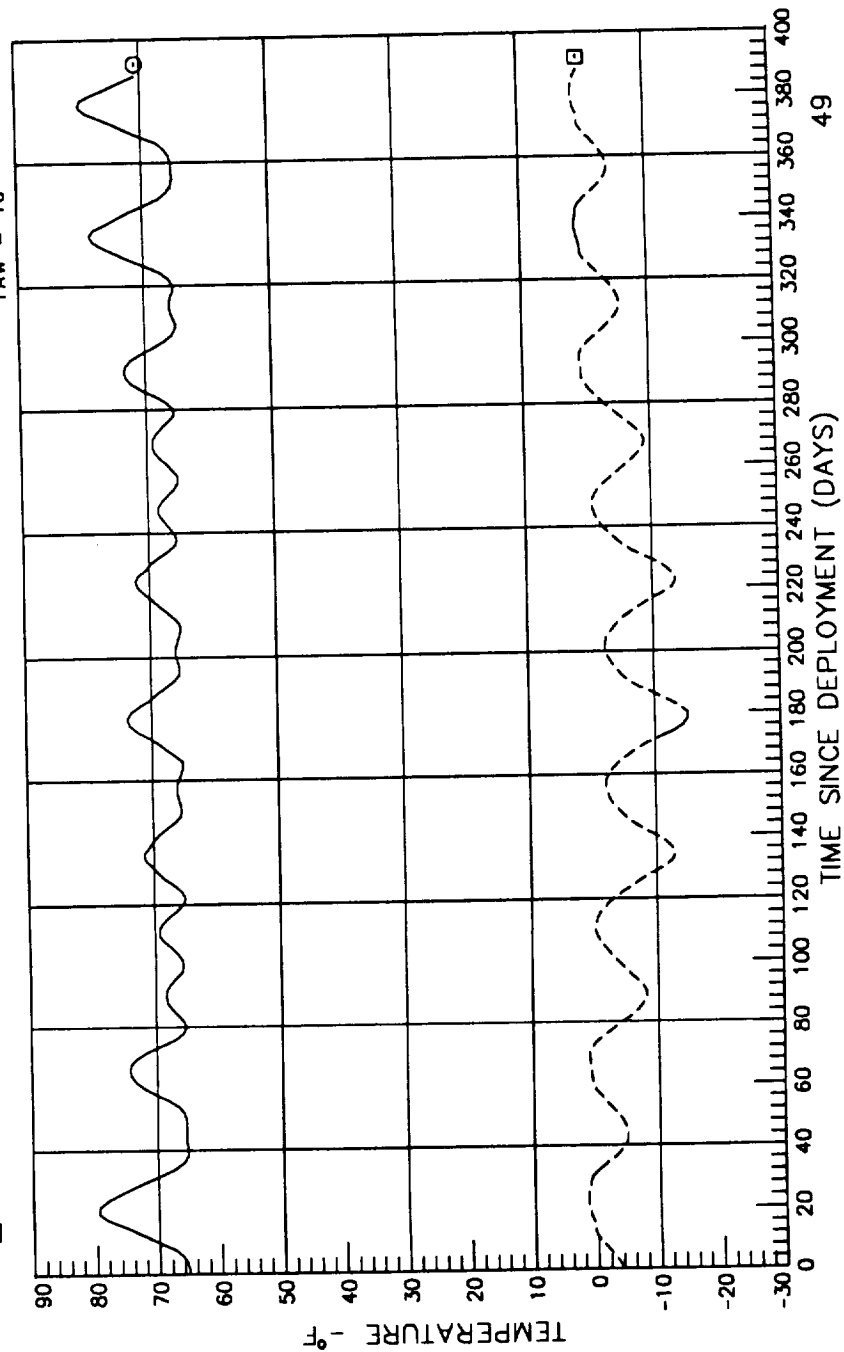
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: A9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

9 TRAY  
 99 SURFACE



# LONG DURATION EXPOSURE FACILITY

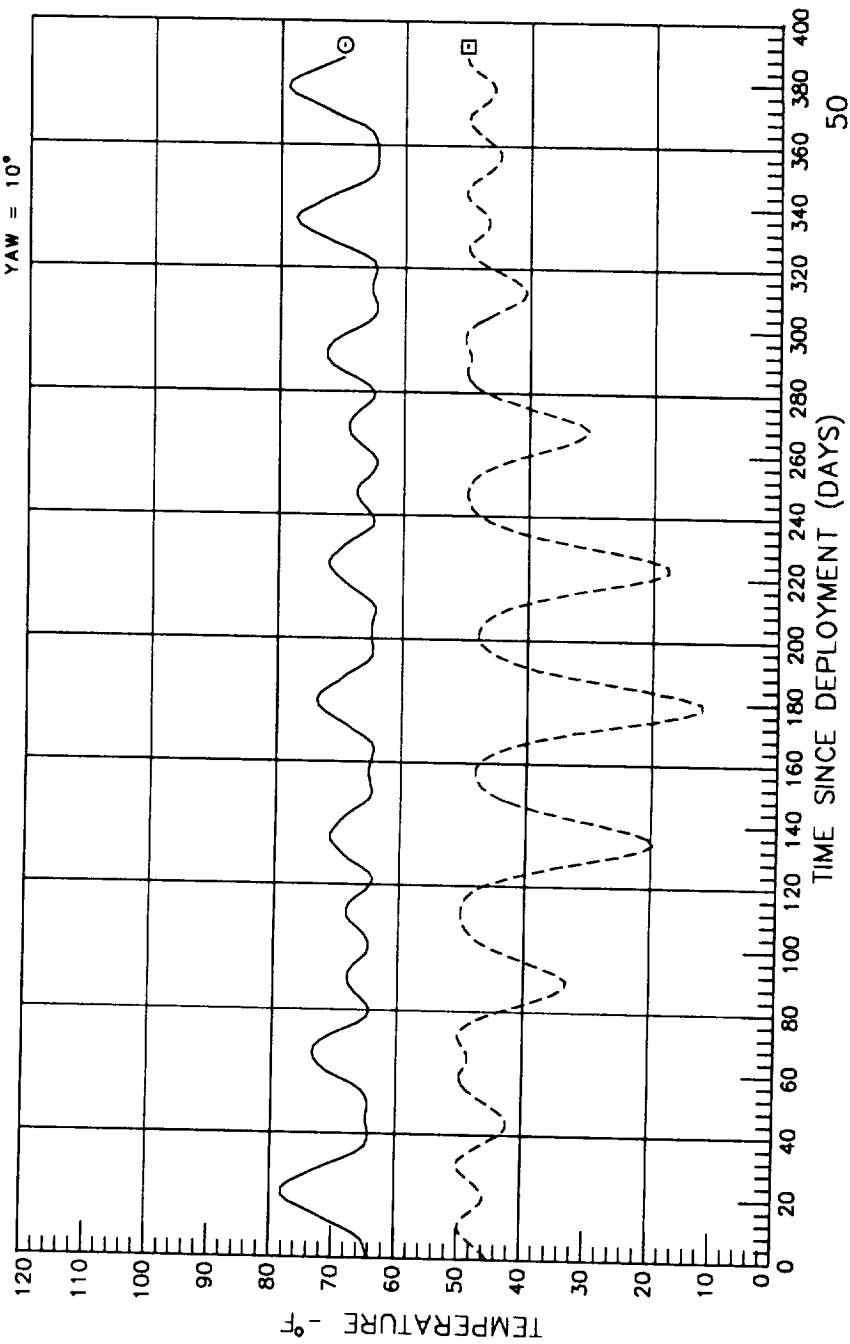
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

21 TRAY  
 111 SURFACE

○  
 □



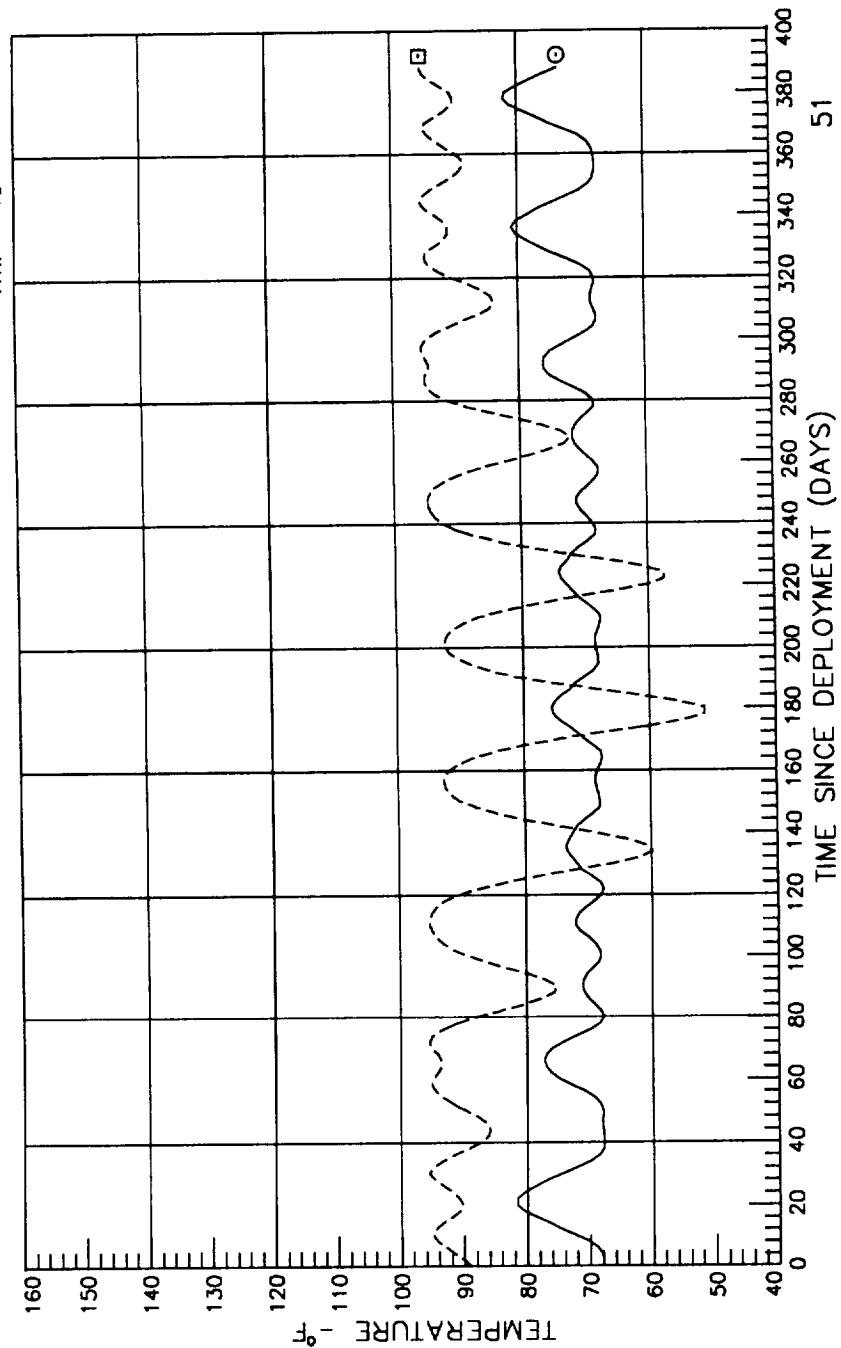
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: C9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 33 TRAY  
 □ 123 SURFACE



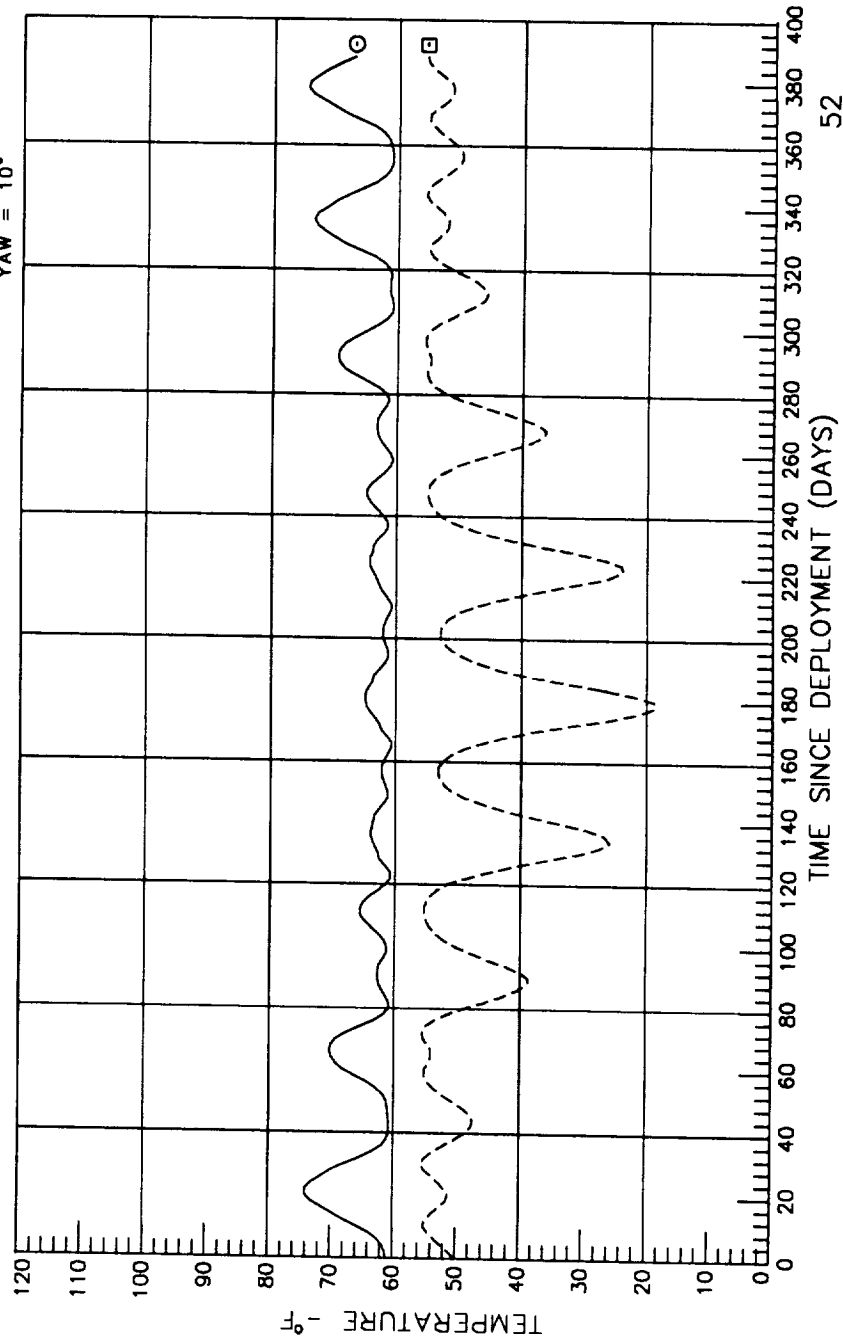
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

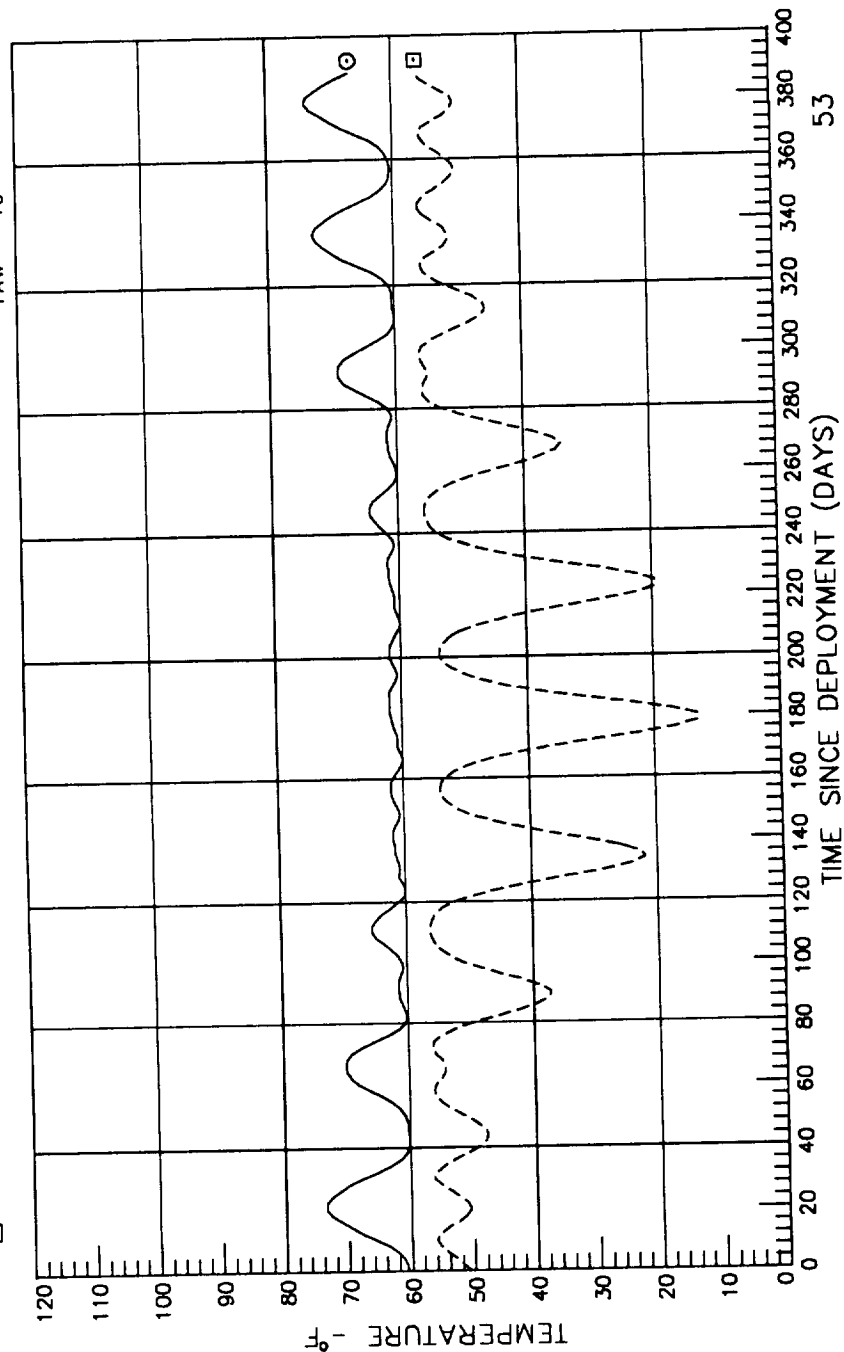
○ 45 TRAY  
 □ 135 SURFACE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: E9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

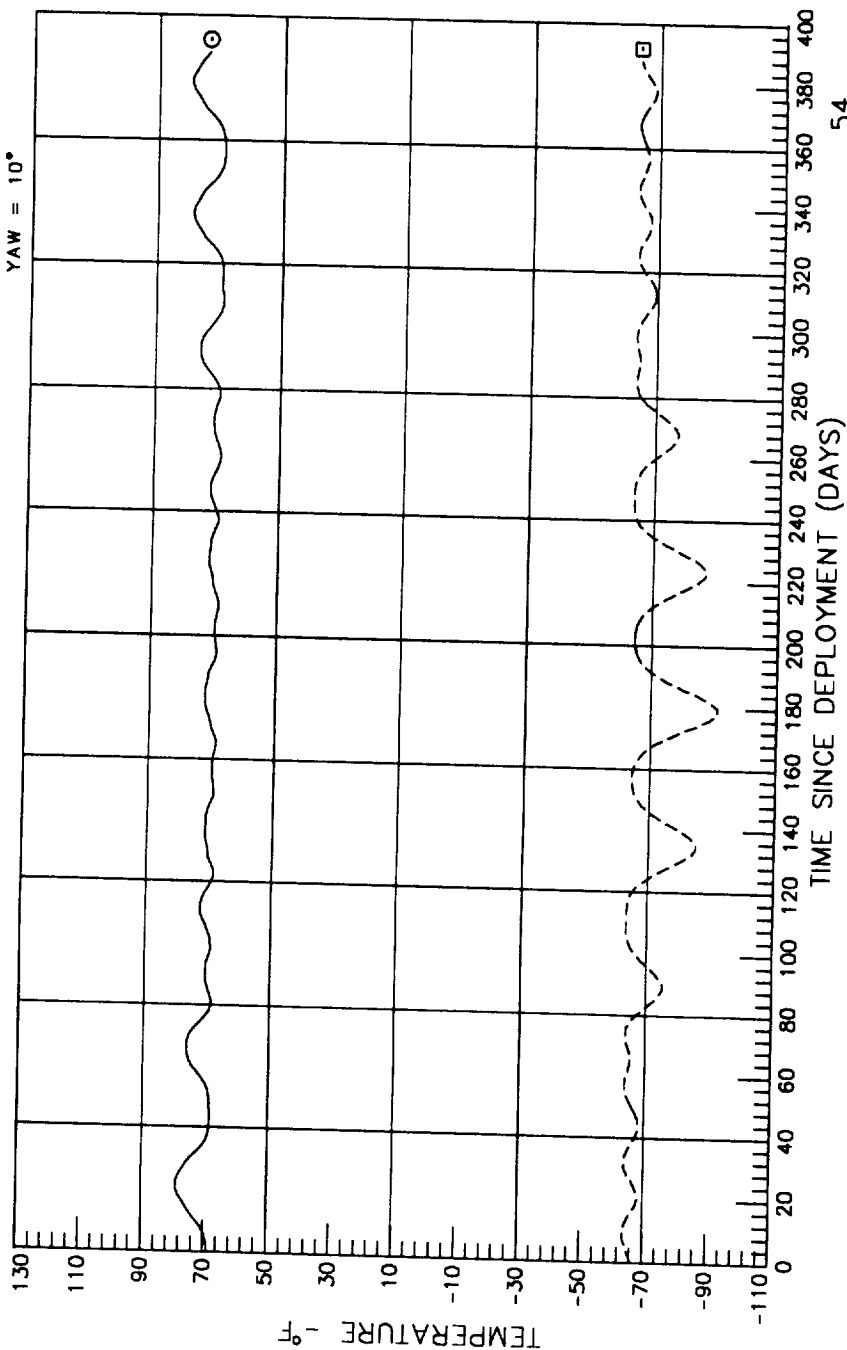
○ 57 TRAY  
 □ 147 SURFACE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: F9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

69 TRAY  
 159 SURFACE



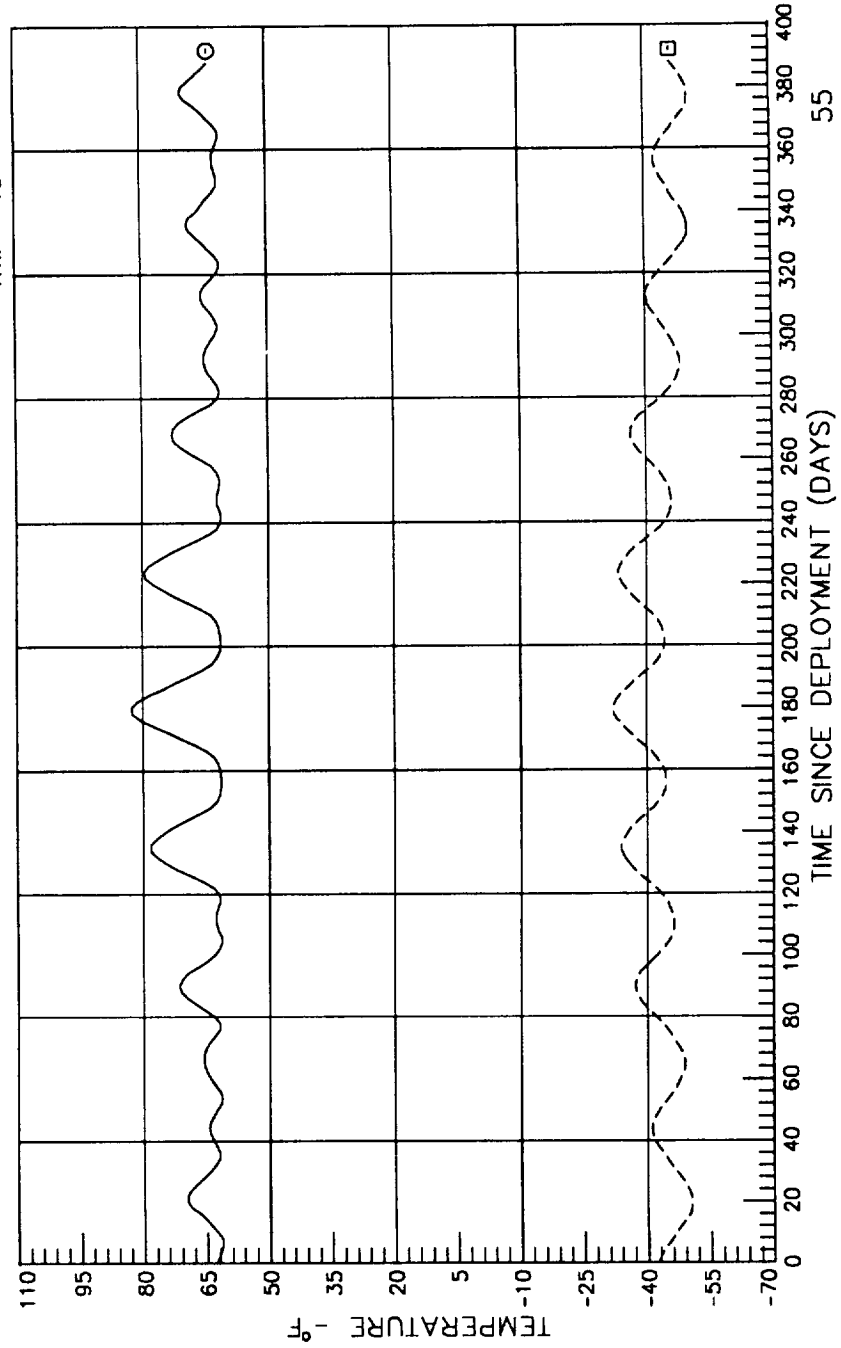
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: A10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 10 TRAY  
 □ 100 SURFACE



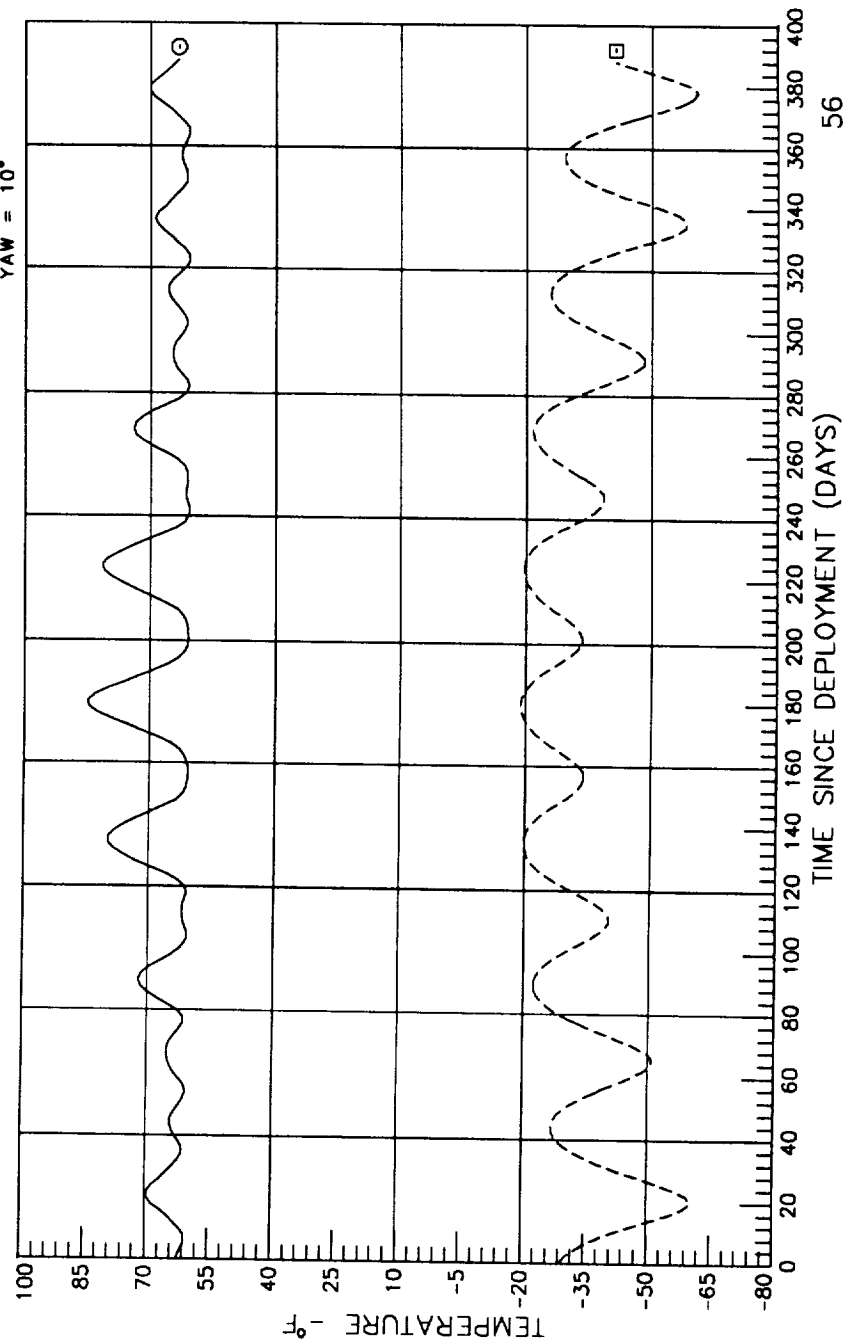
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

⊙ ——— 22 TRAY  
 □ - - - - 112 SURFACE



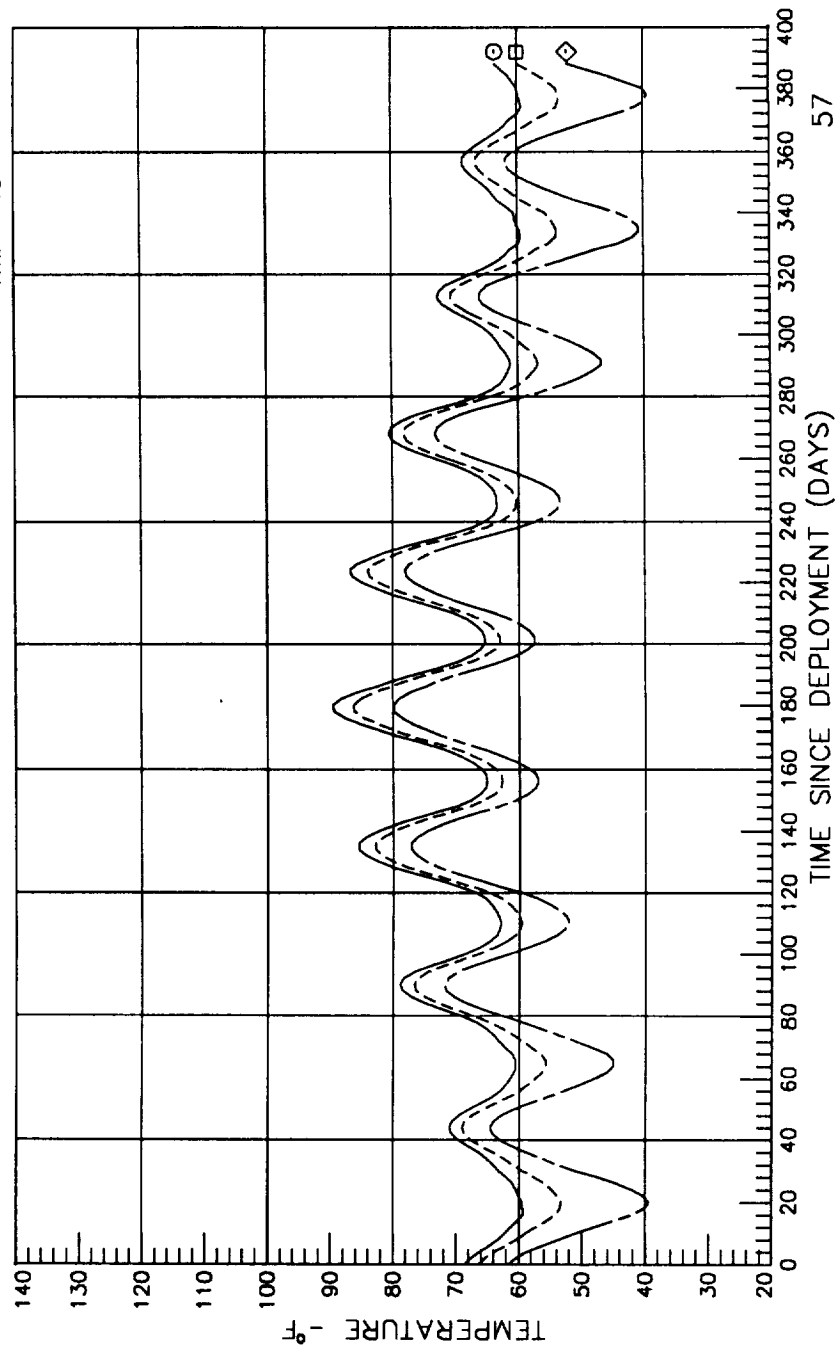


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: C10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°

○ 34 TRAY  
□ 124 SURFACE  
◇ 275 SURFACE



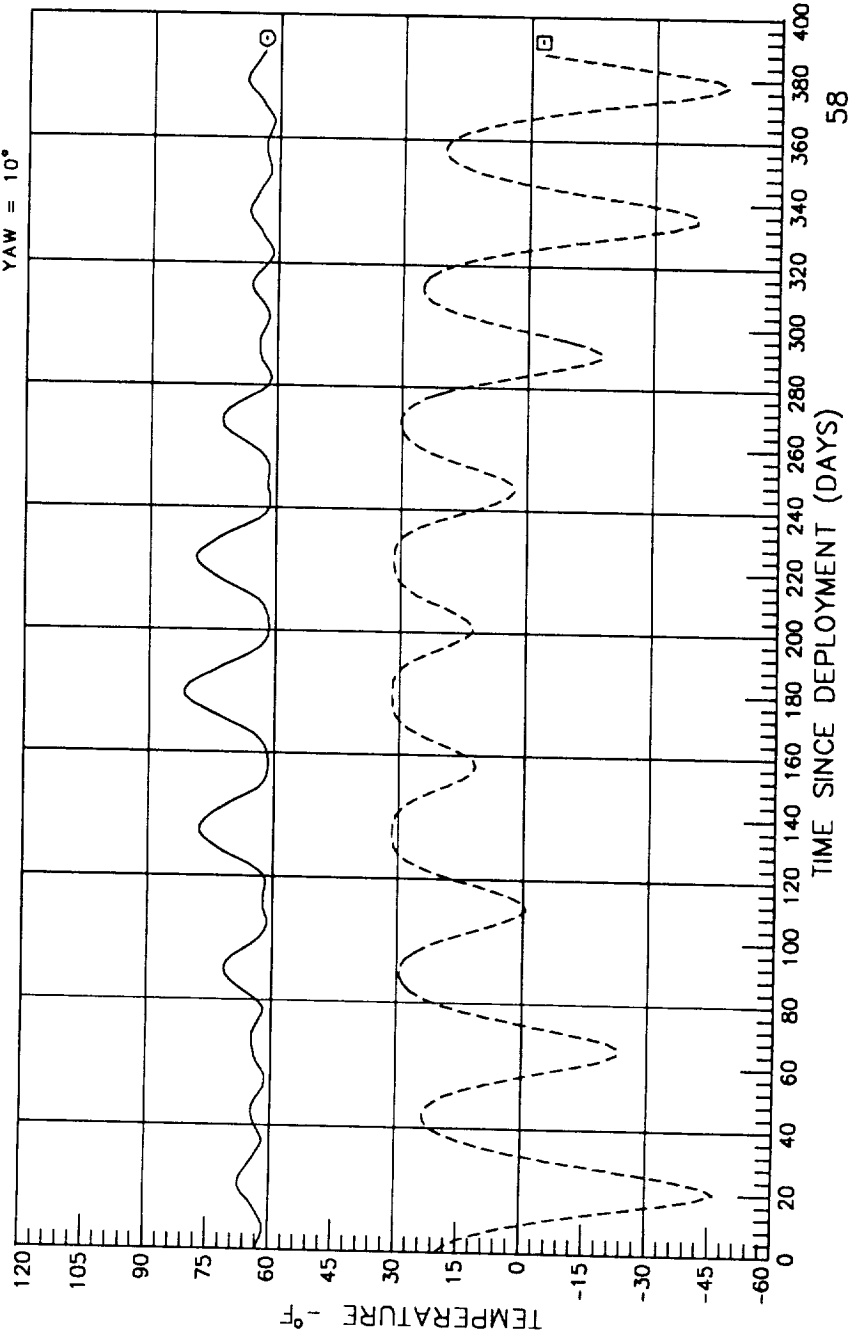
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

⊙ ——— 46 TRAY  
 □ - - - - 136 SURFACE



# LONG DURATION EXPOSURE FACILITY

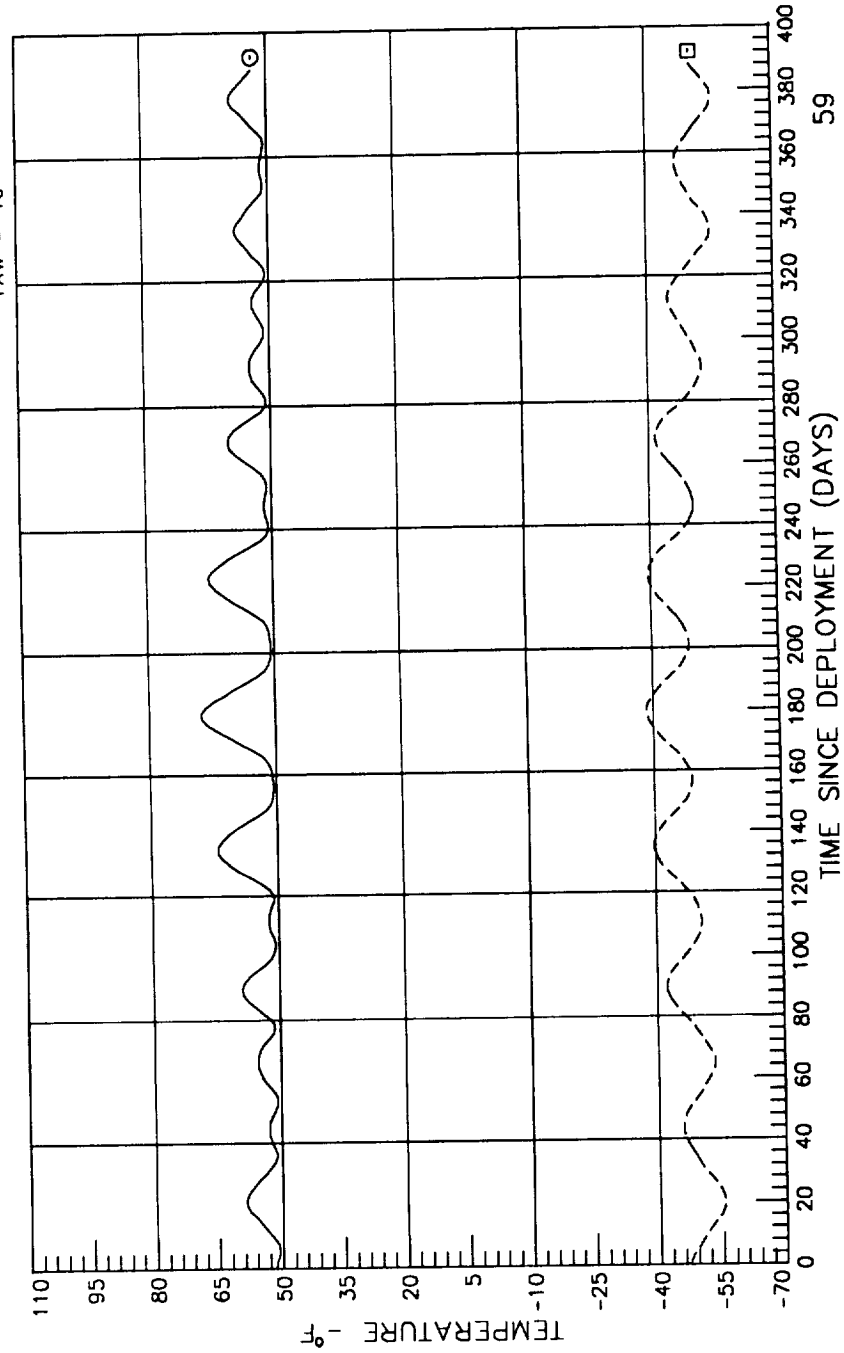
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

58 TRAY  
 148 SURFACE

○ ———  
 □ - - - -



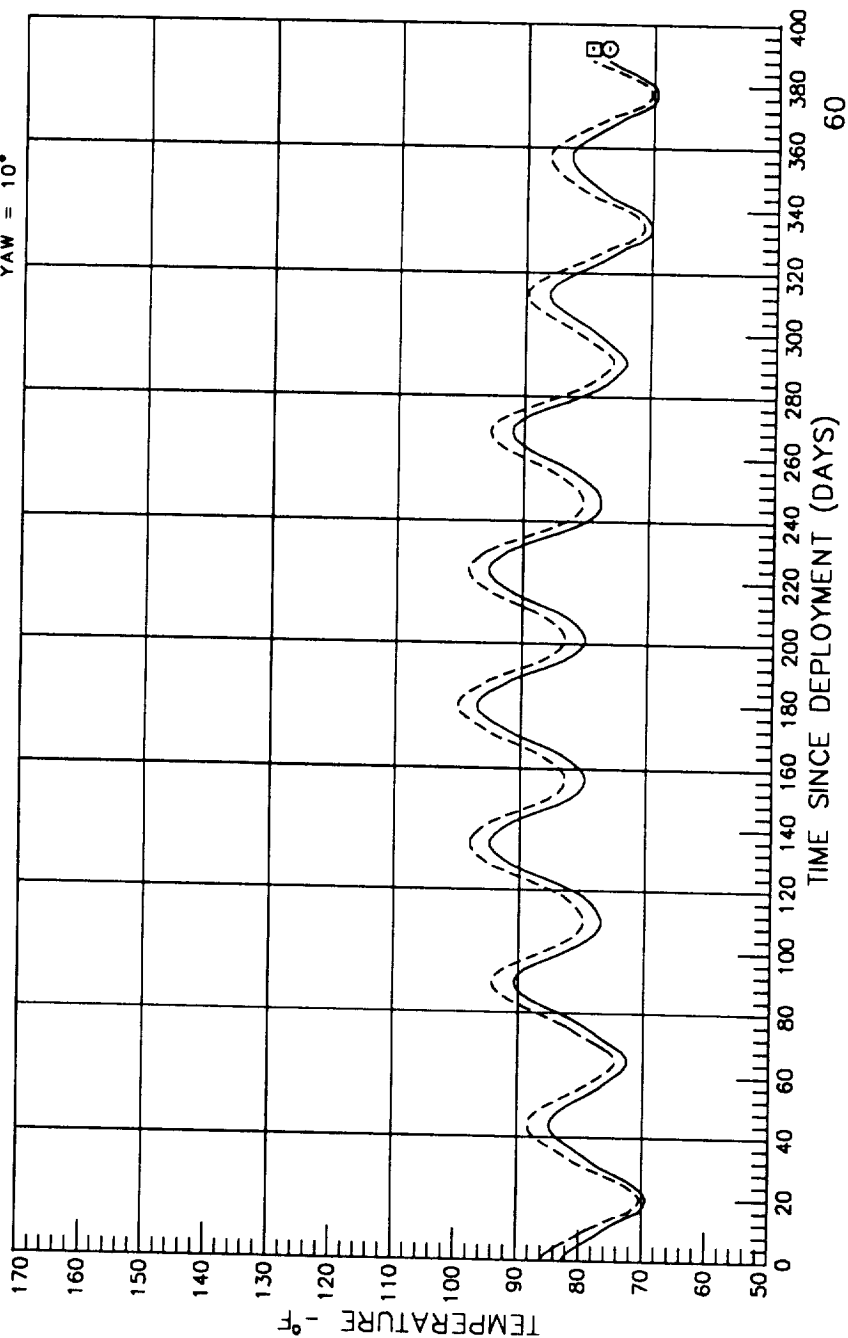
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: F10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 70 TRAY  
 □ - - - 160 SURFACE

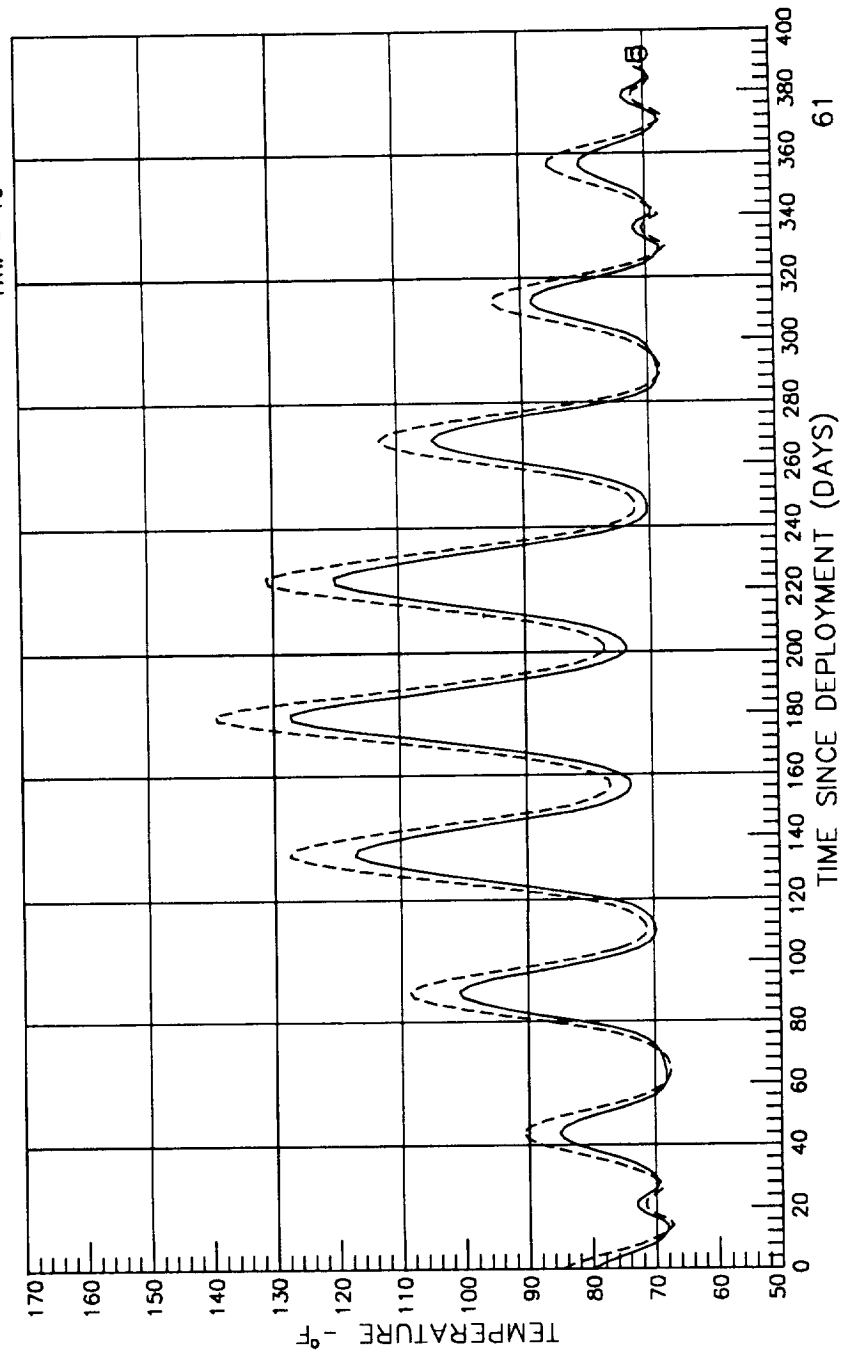


# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: A11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°

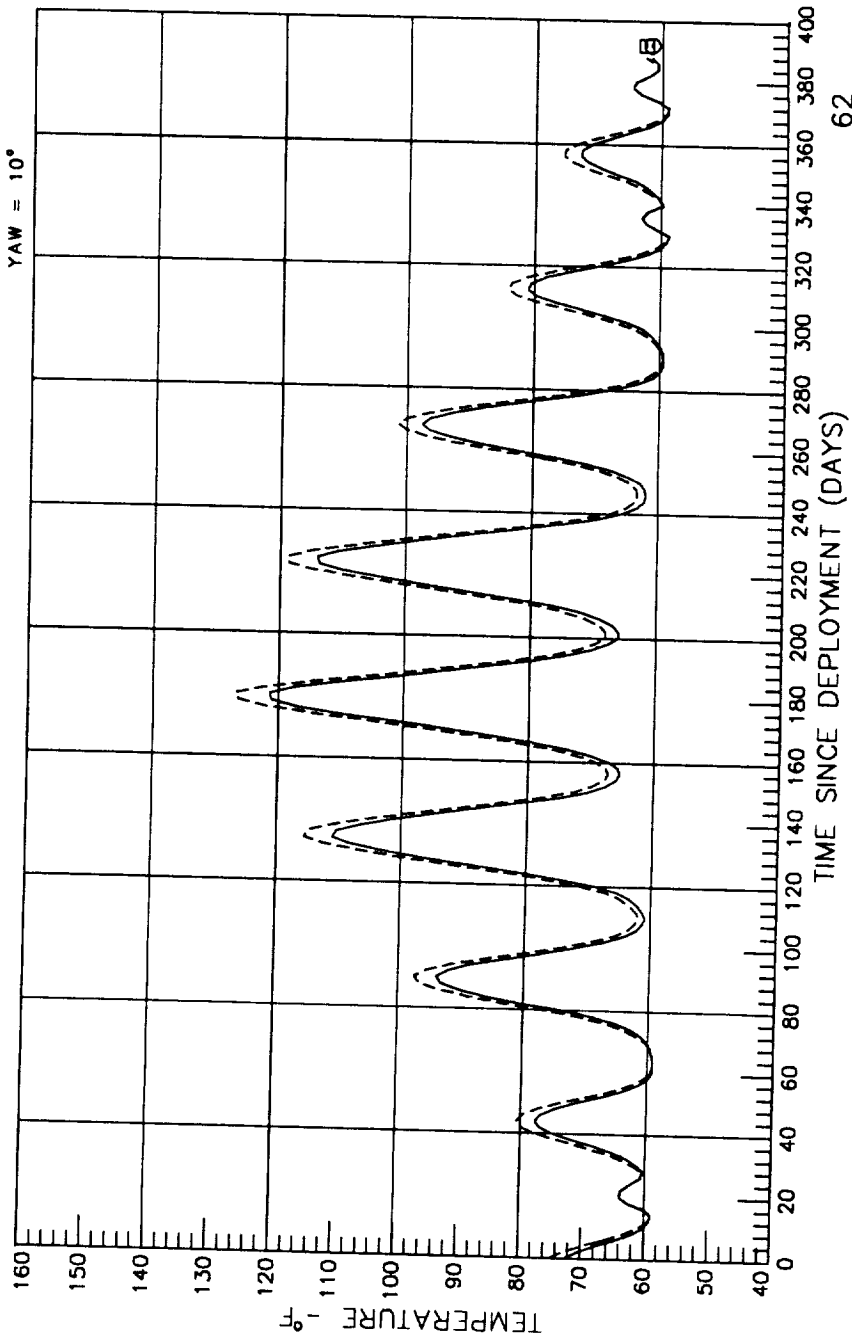
○ — 11 TRAY  
□ - - - 101 SURFACE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: B11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 23 TRAY  
 □ 113 SURFACE



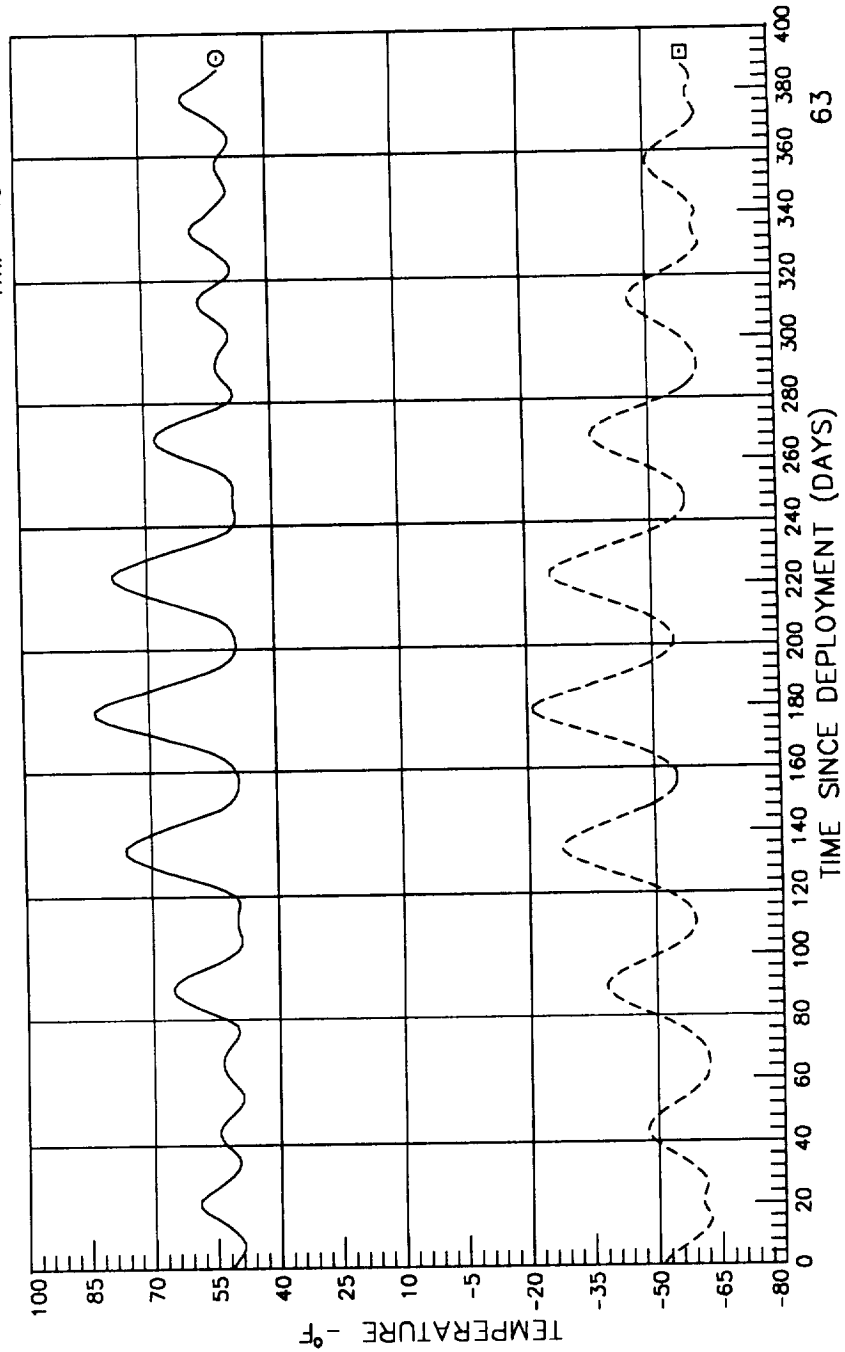
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: C11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 35 TRAY  
 □ 125 SURFACE



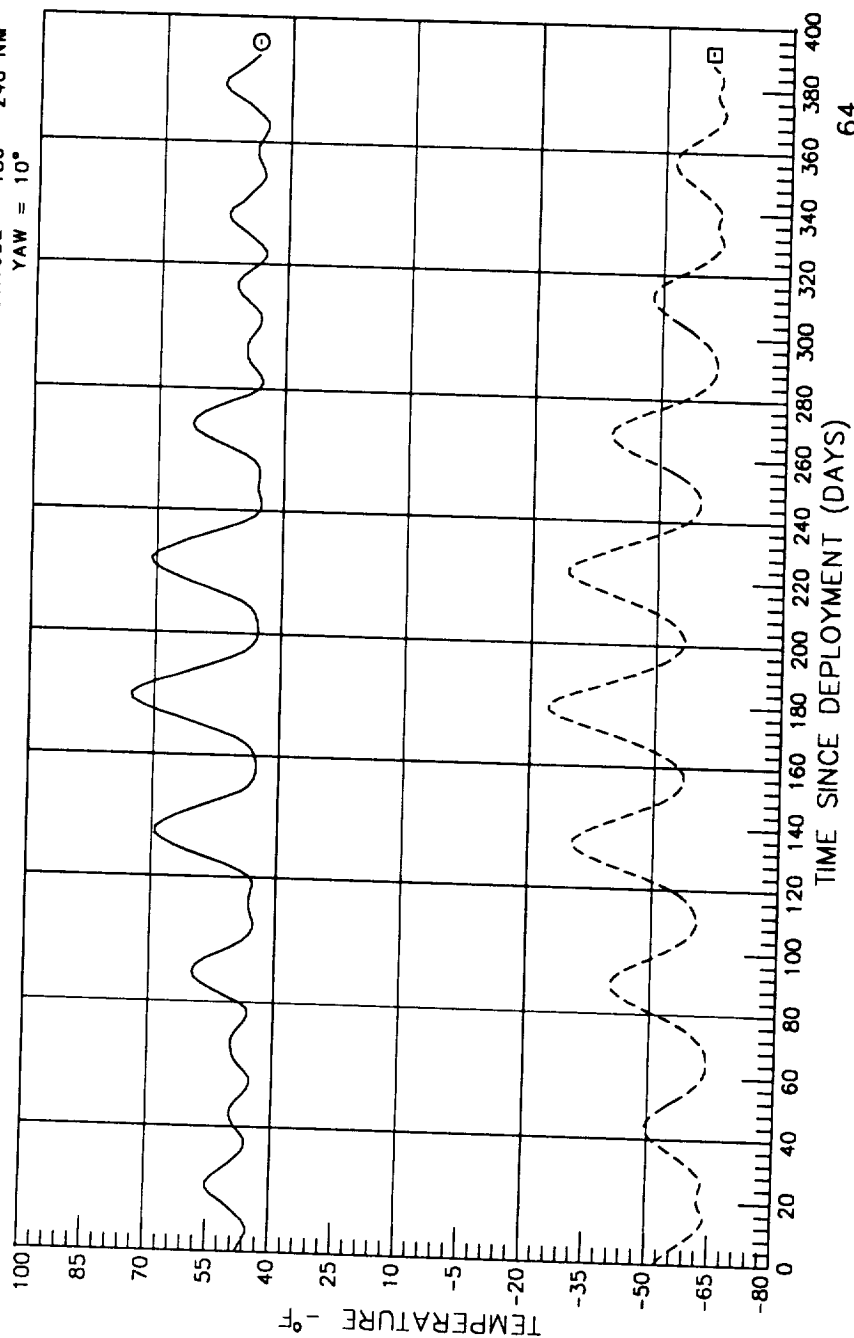
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 47 TRAY  
 □ 137 SURFACE





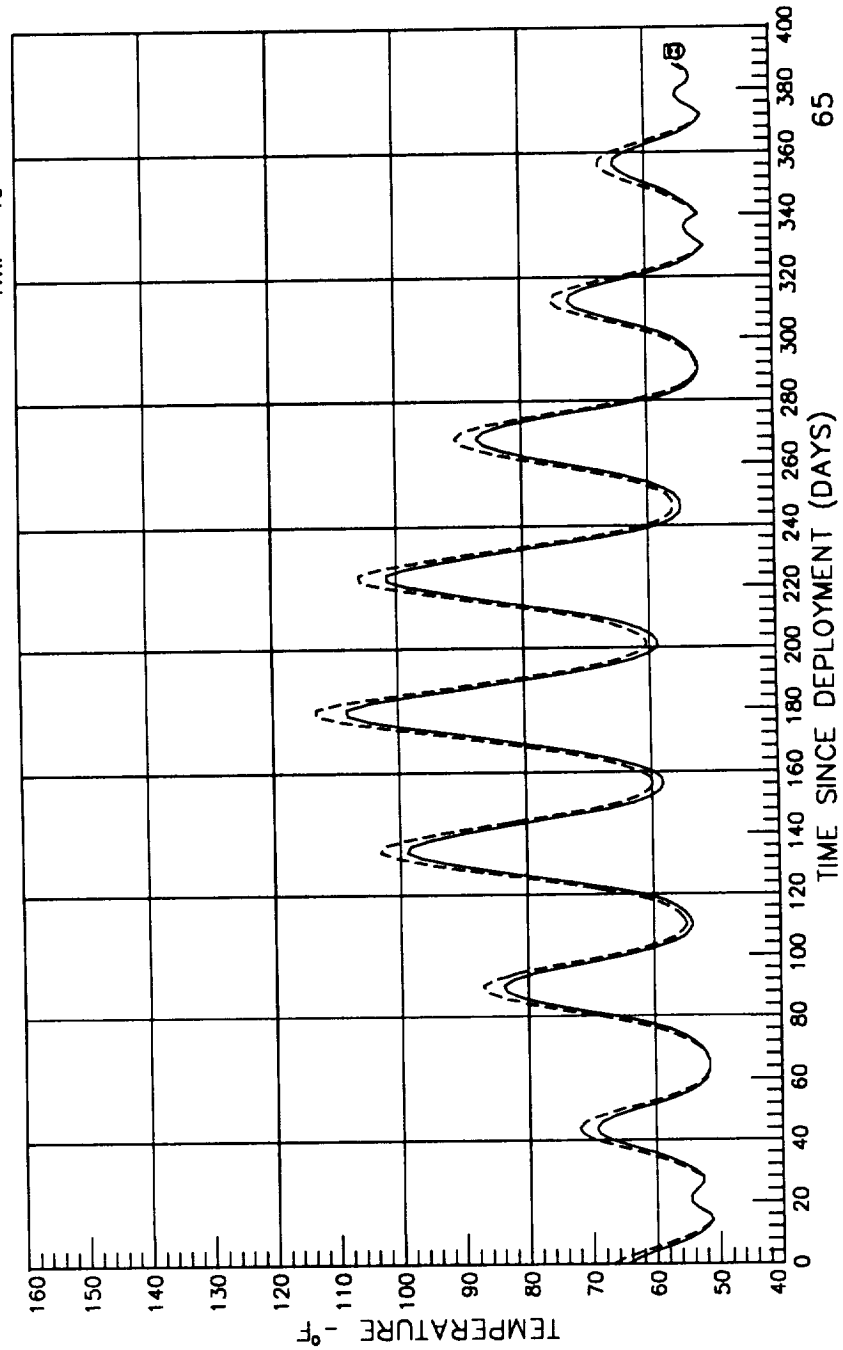
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

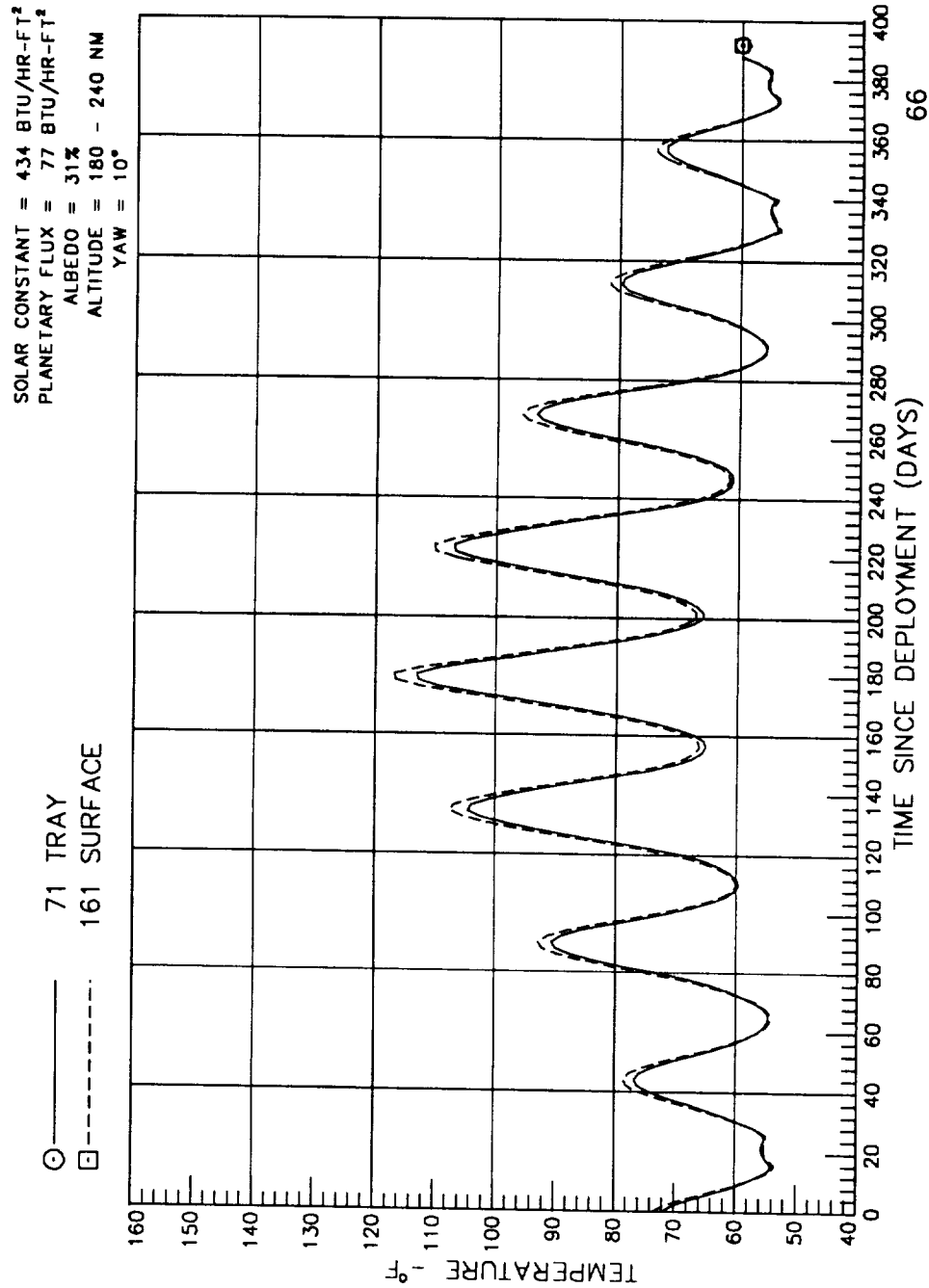
○—— 59 TRAY  
 □----- 149 SURFACE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: F11



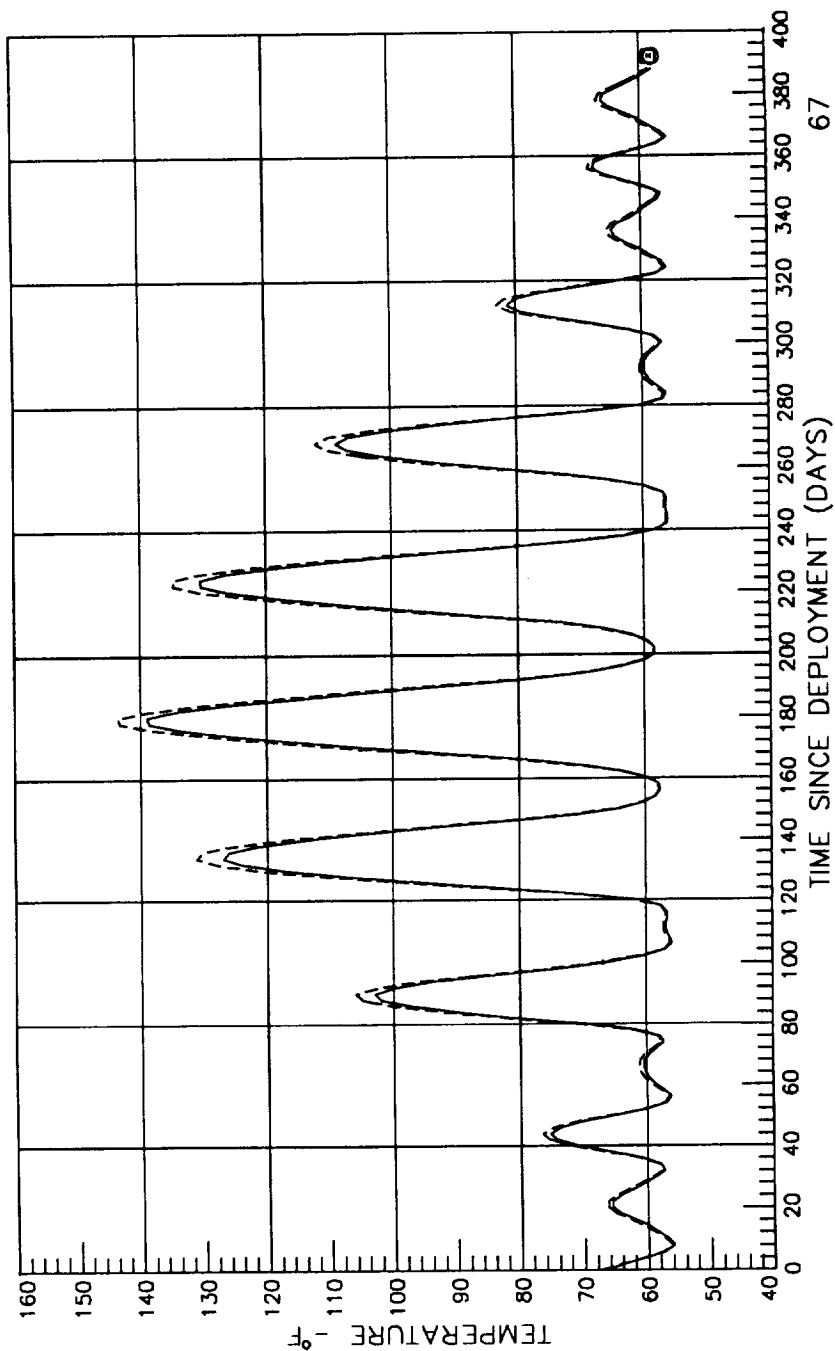
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: A12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 12 TRAY  
 □ 102 SURFACE



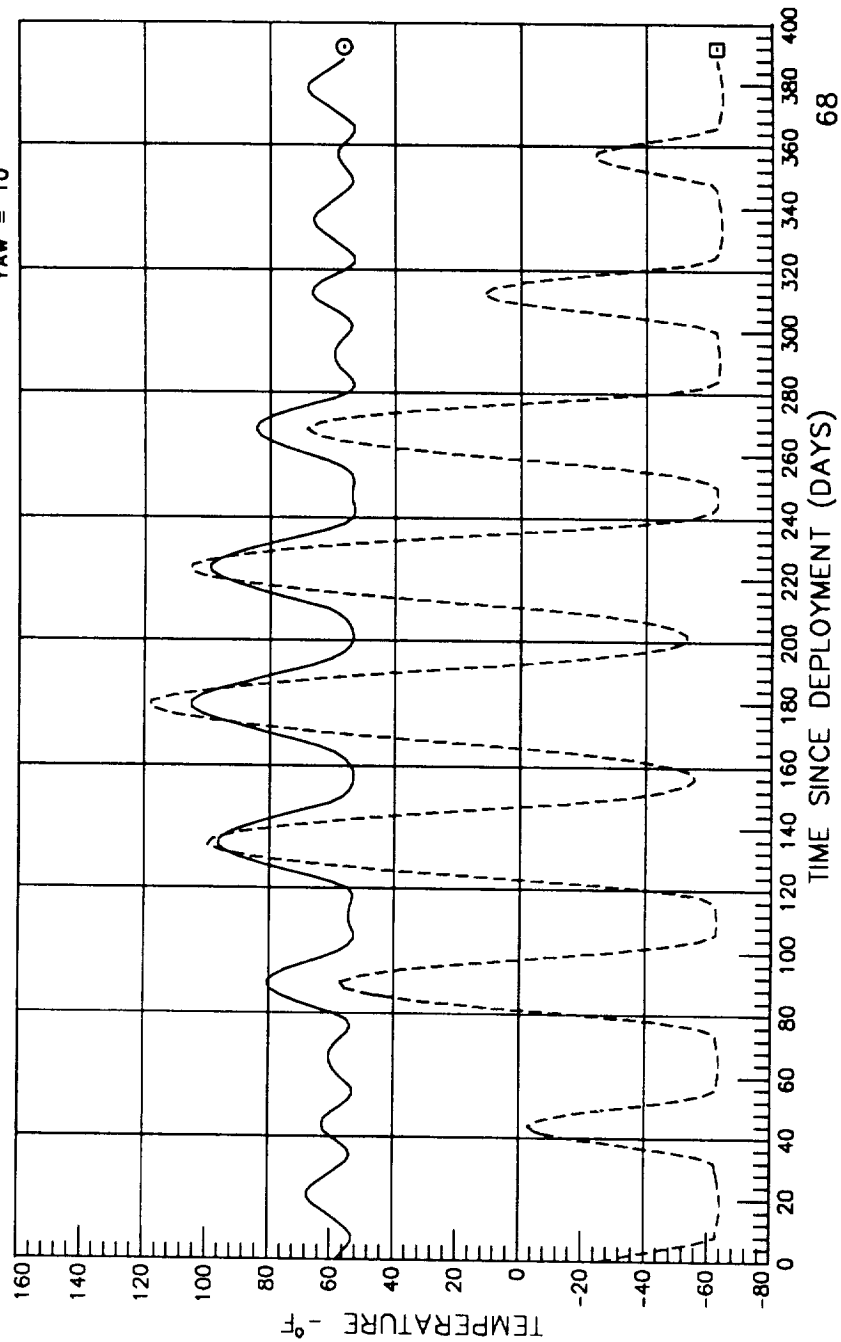
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: B12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

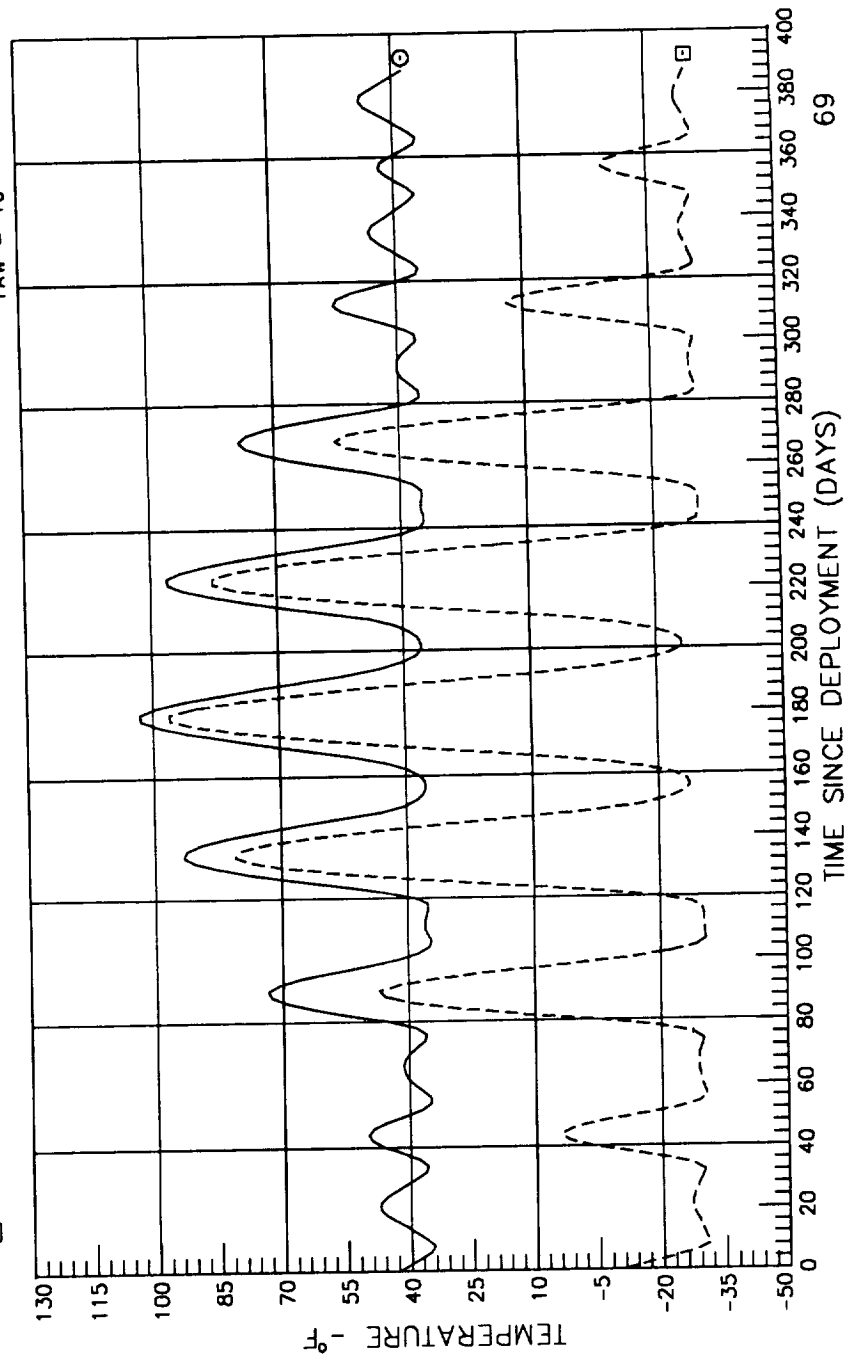
○ 24 TRAY  
 □ 114 SURFACE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: C12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

36 TRAY  
 126 SURFACE



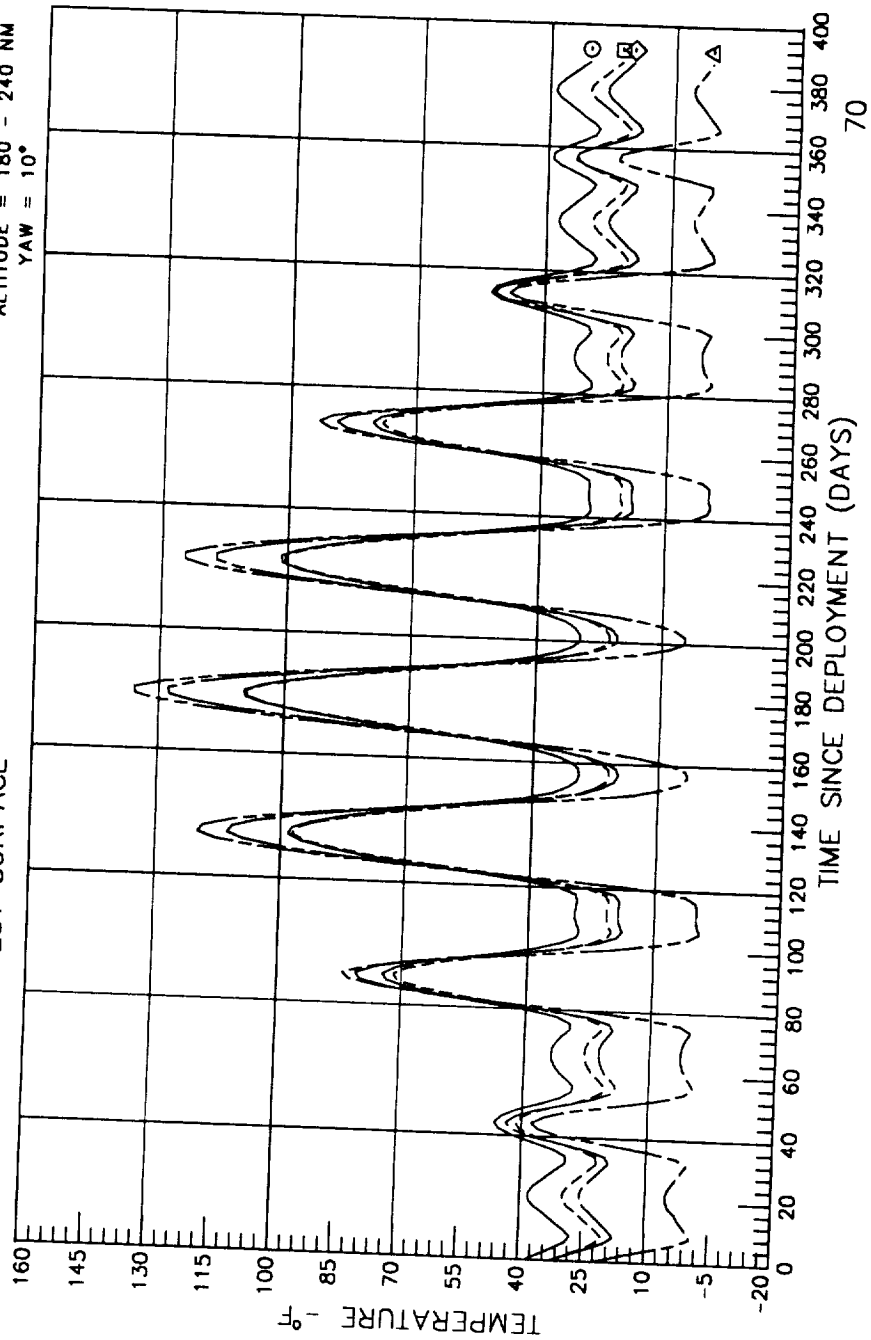
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: D12

○ 48 TRAY  
 □ 138 SURFACE  
 ◇ 280 SURFACE  
 △ 281 SURFACE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



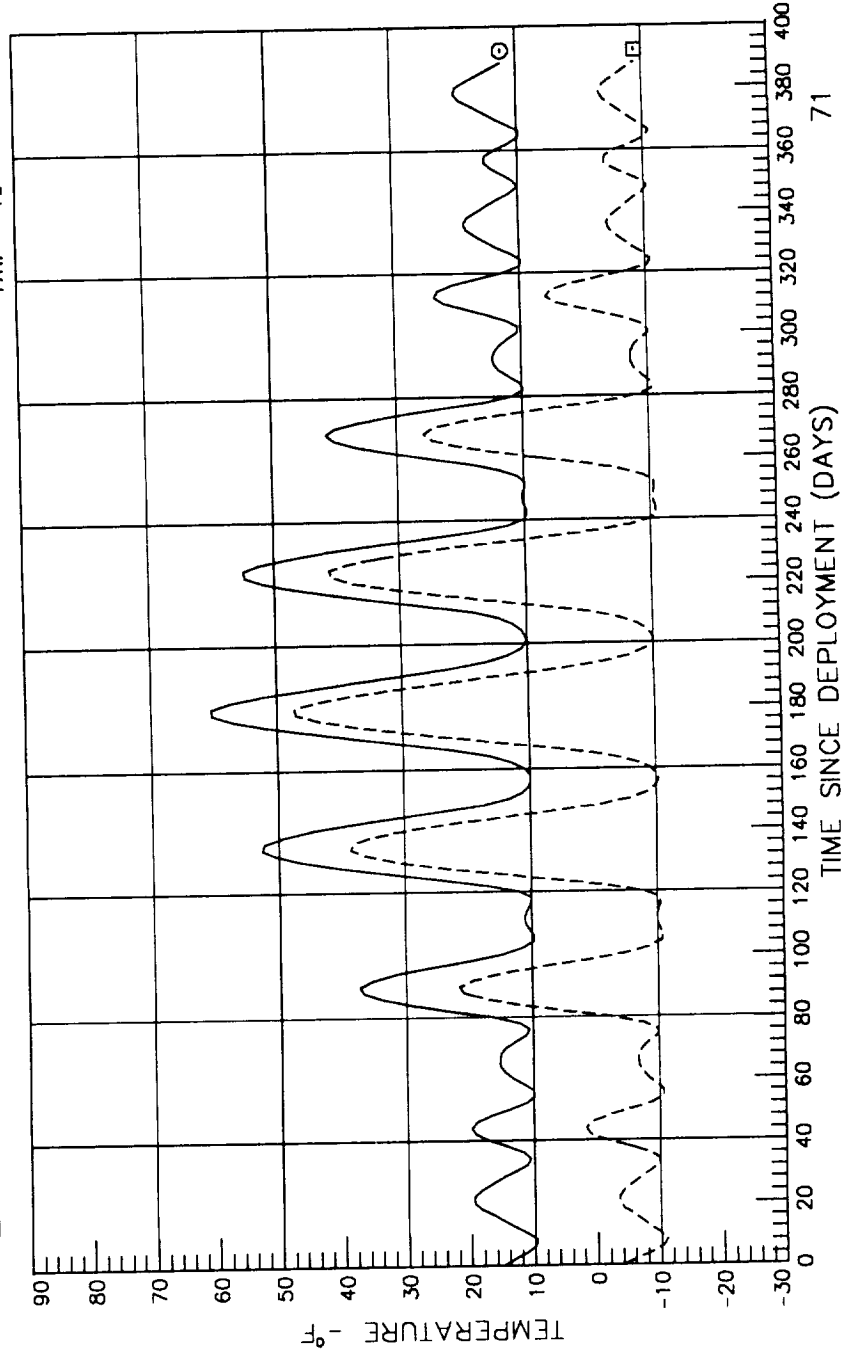
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: E12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

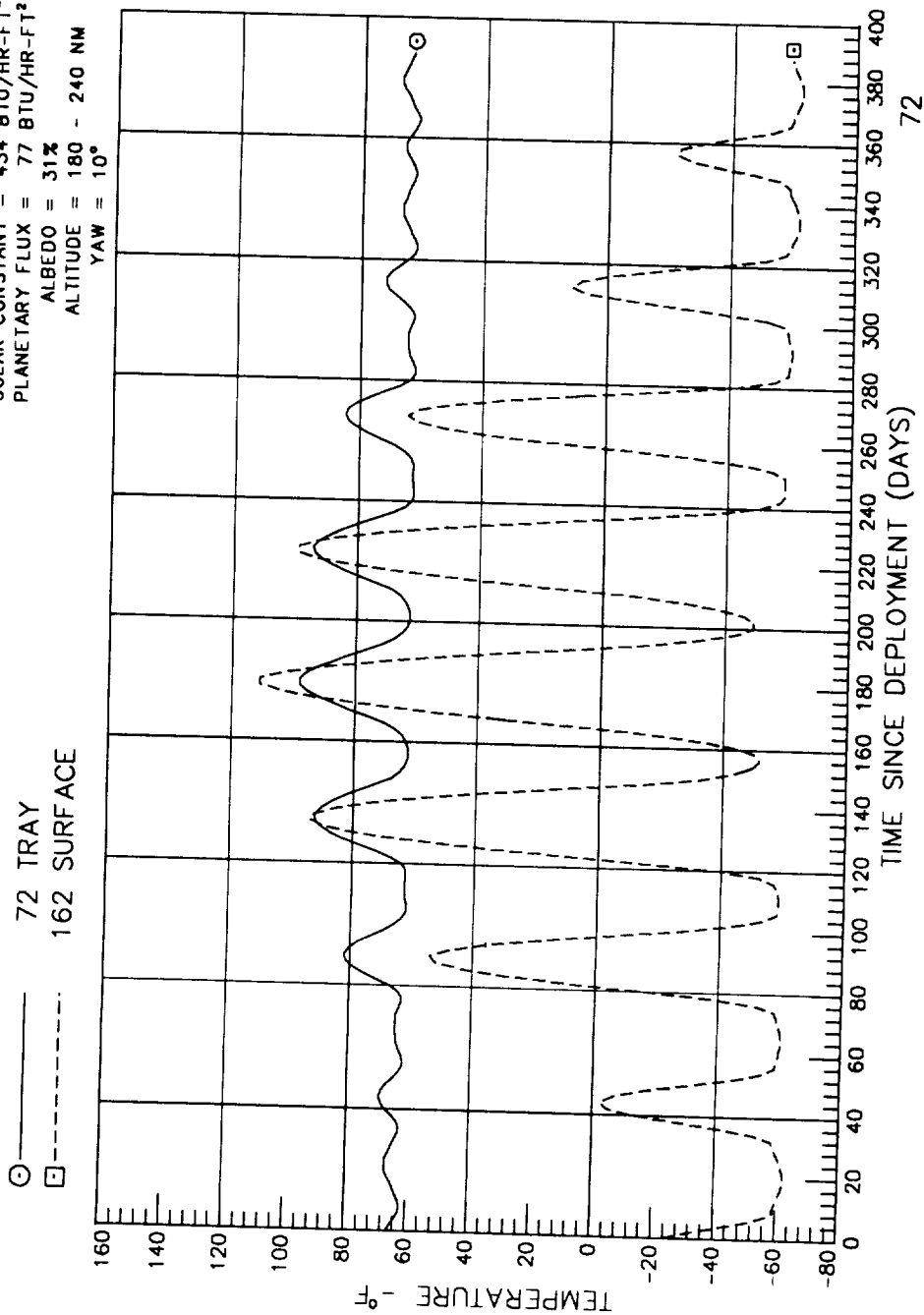
○—— 60 TRAY  
 □----- 150 SURFACE



# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: F12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°





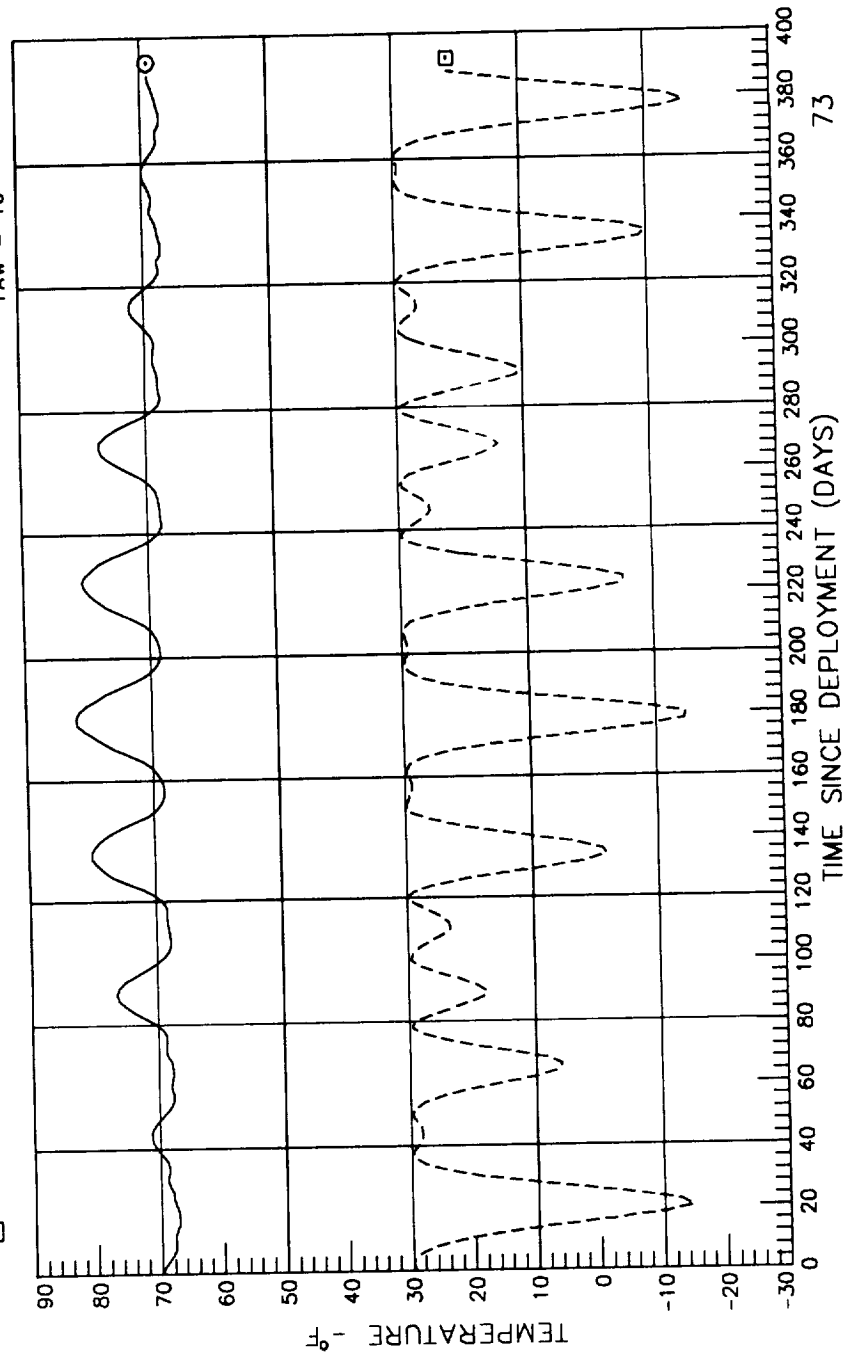
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: H1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°

90 TRAY  
261 SURFACE

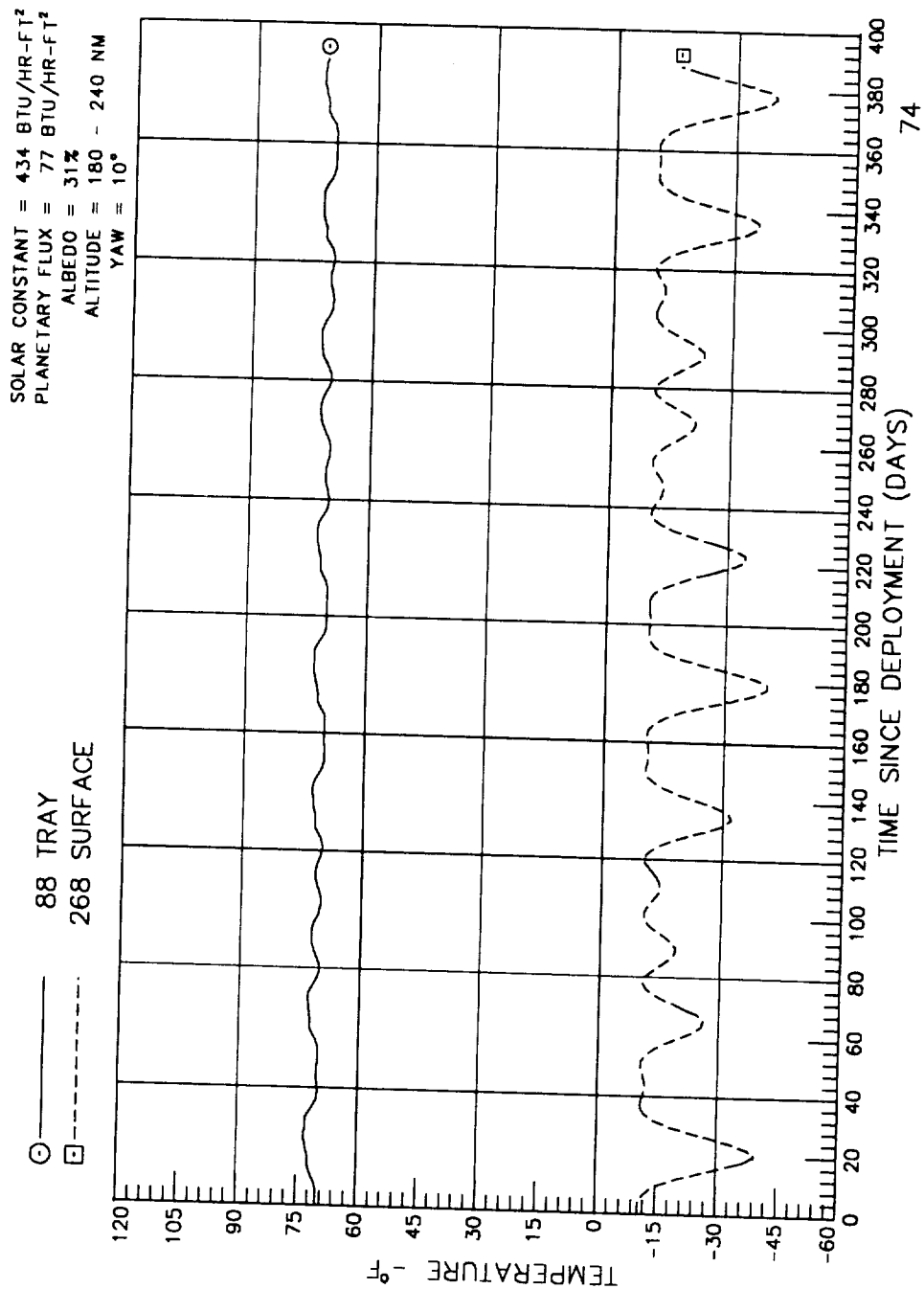
○  
□



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: H3



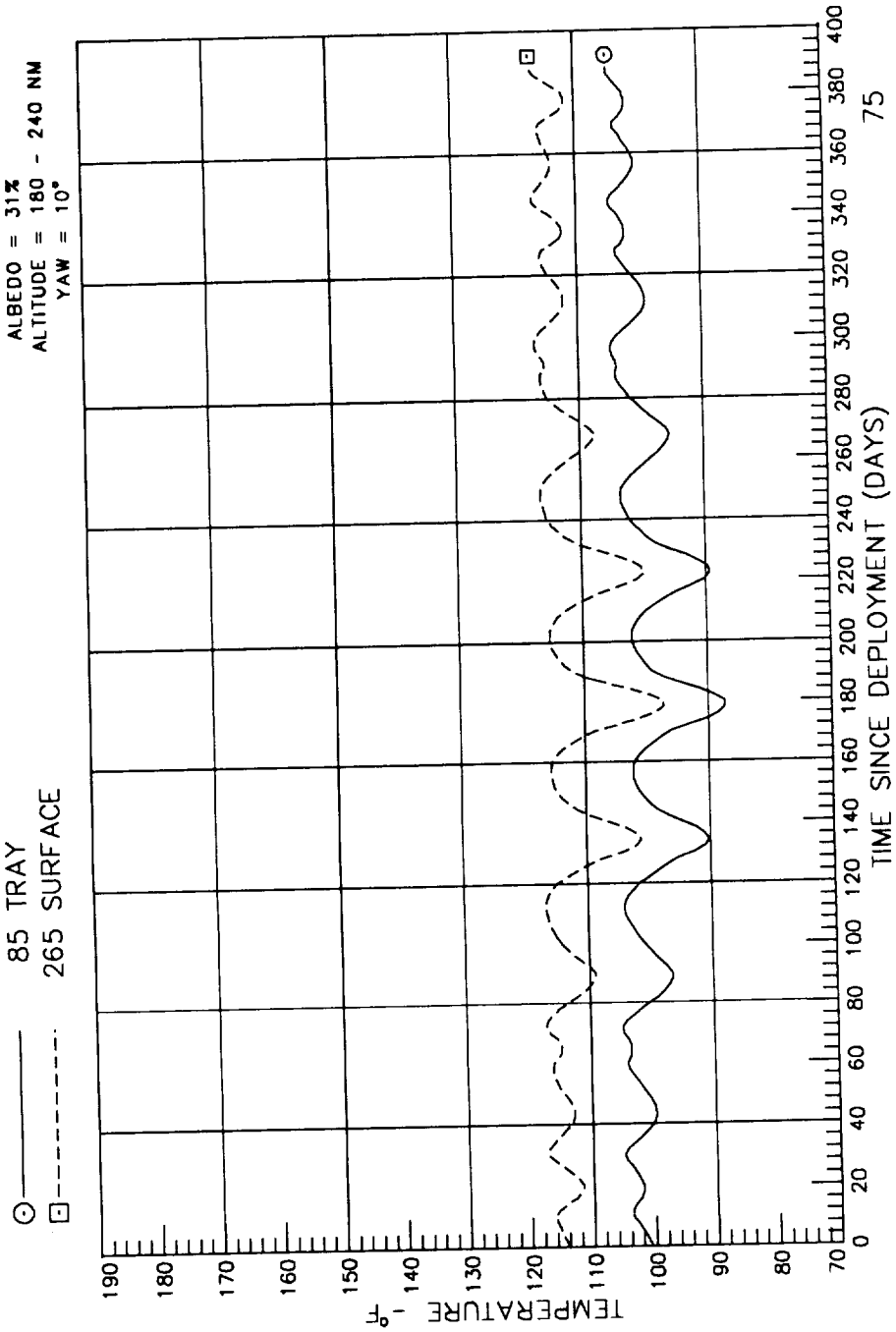
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: H5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

85 TRAY  
 265 SURFACE

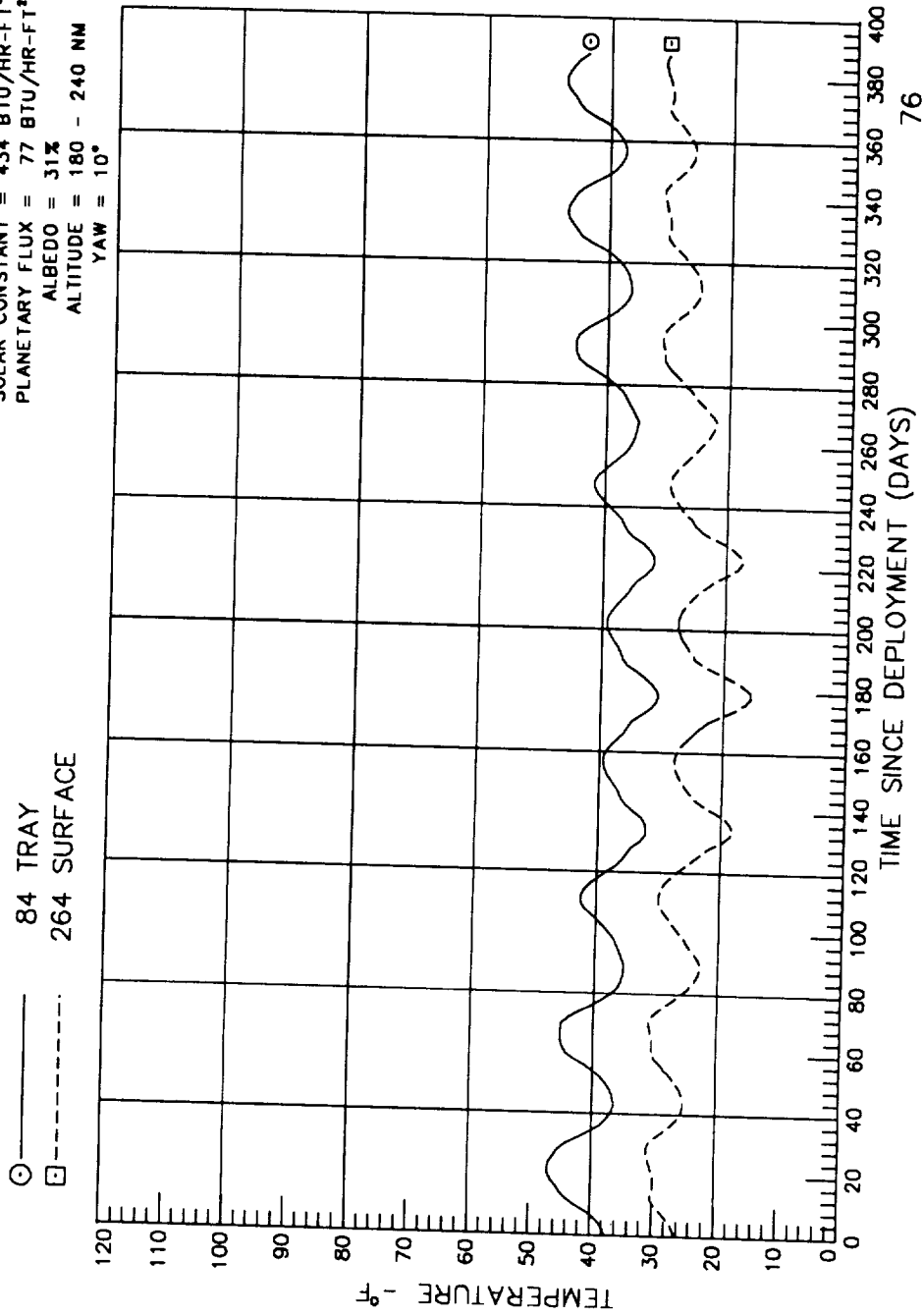


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: H6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



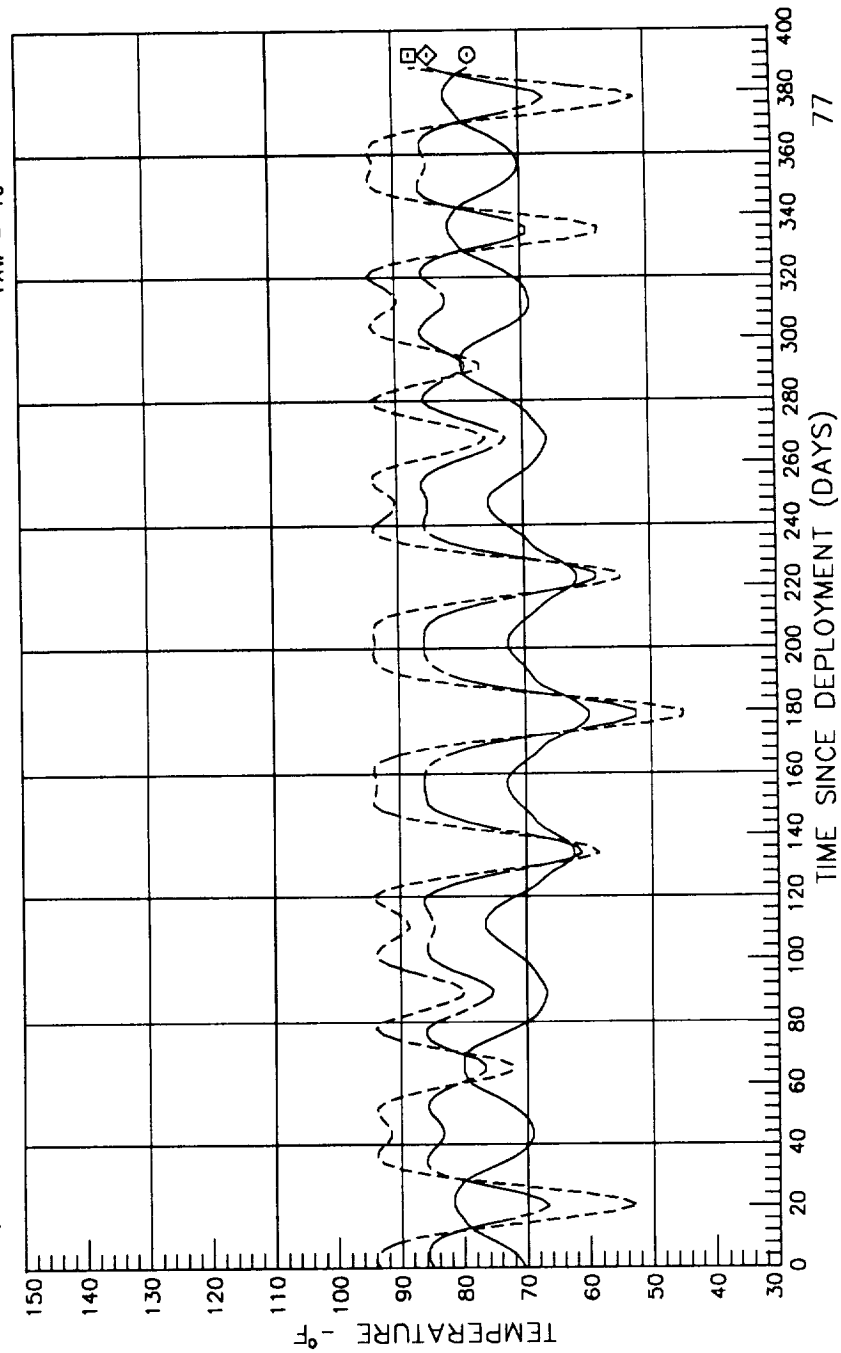
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
LOCATION: H7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°

83 TRAY  
263 SURFACE  
282 SURFACE

○  
□  
◇



# LONG DURATION EXPOSURE FACILITY

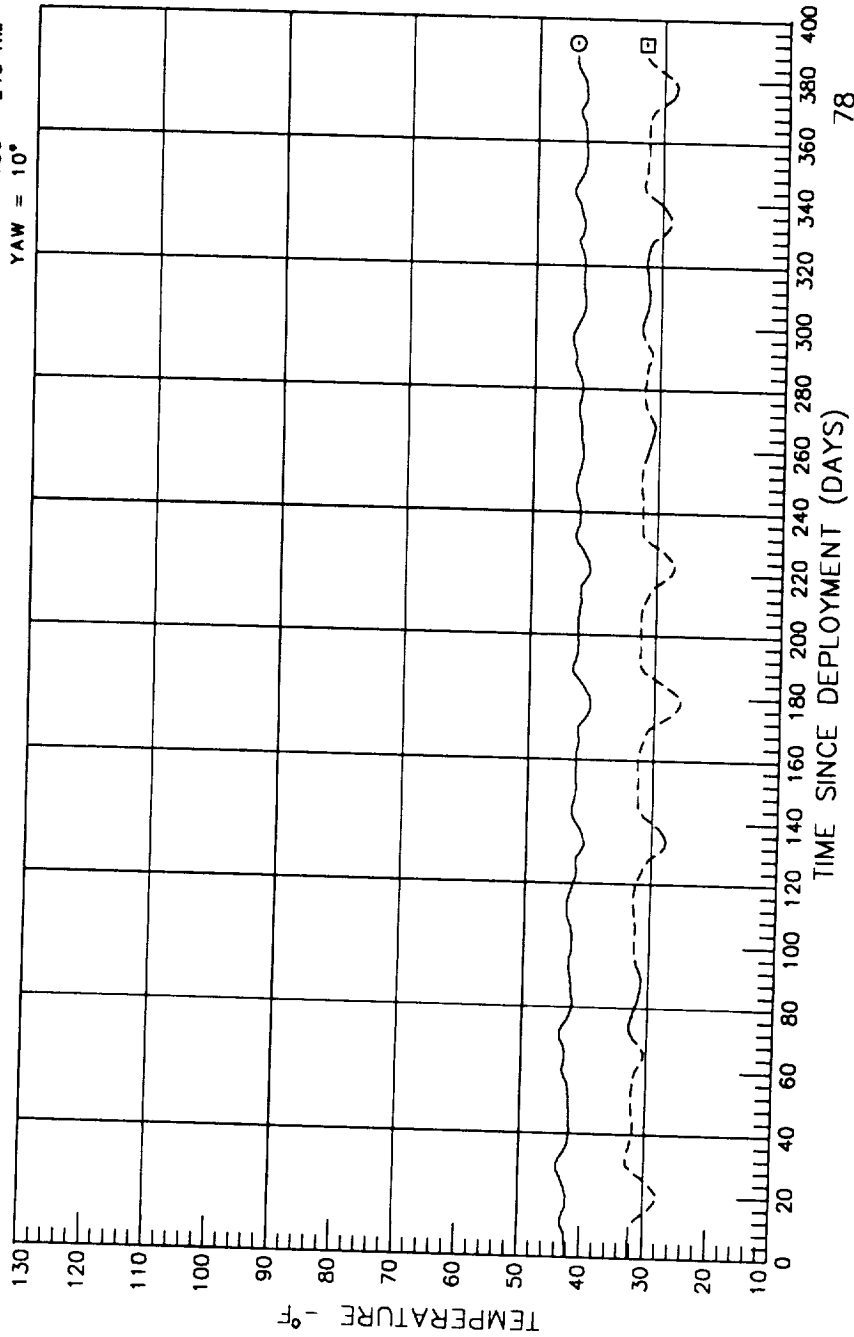
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: H9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

86 TRAY  
 266 SURFACE

○  
 □



# LONG DURATION EXPOSURE FACILITY

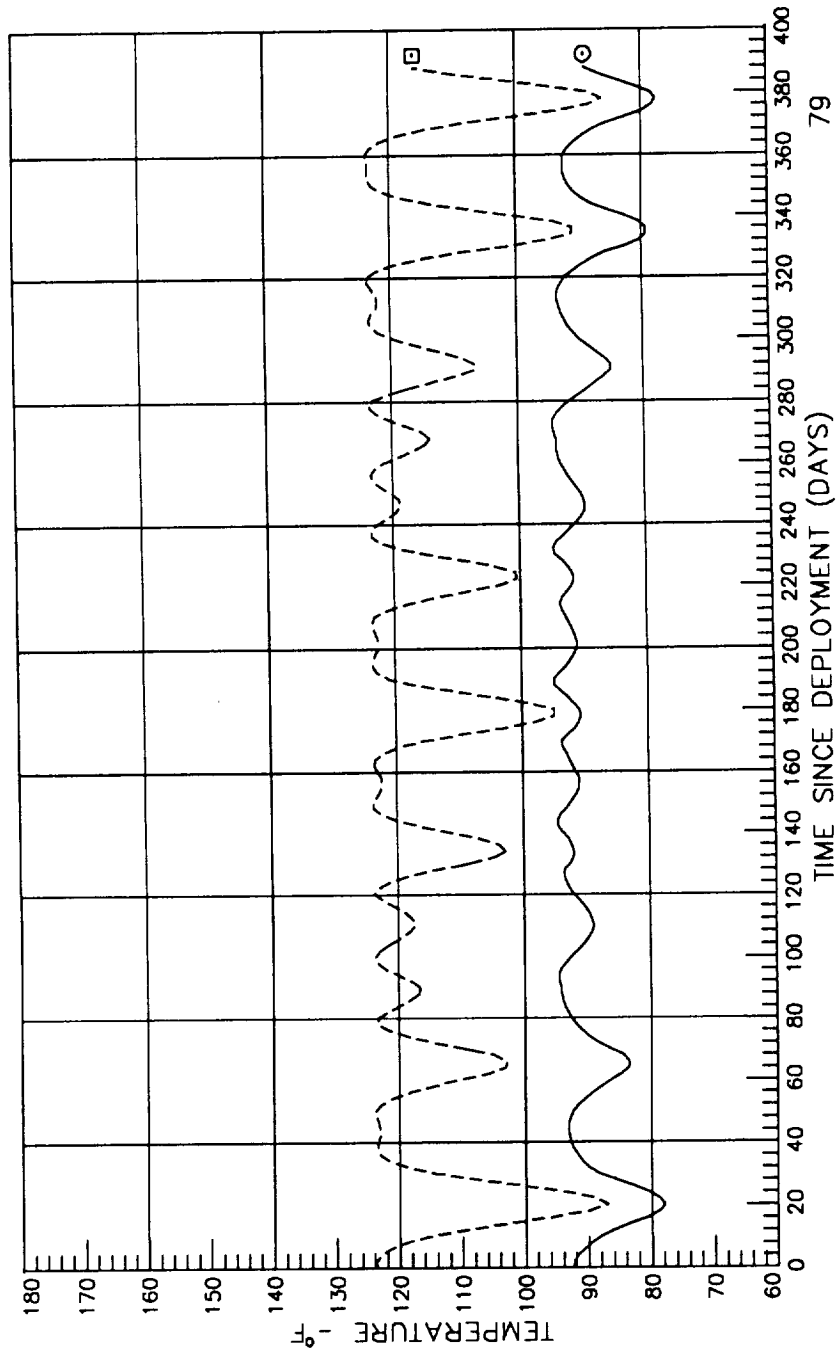
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: H11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

82 TRAY  
 262 SURFACE

○ ——— 82 TRAY  
 □ - - - - 262 SURFACE



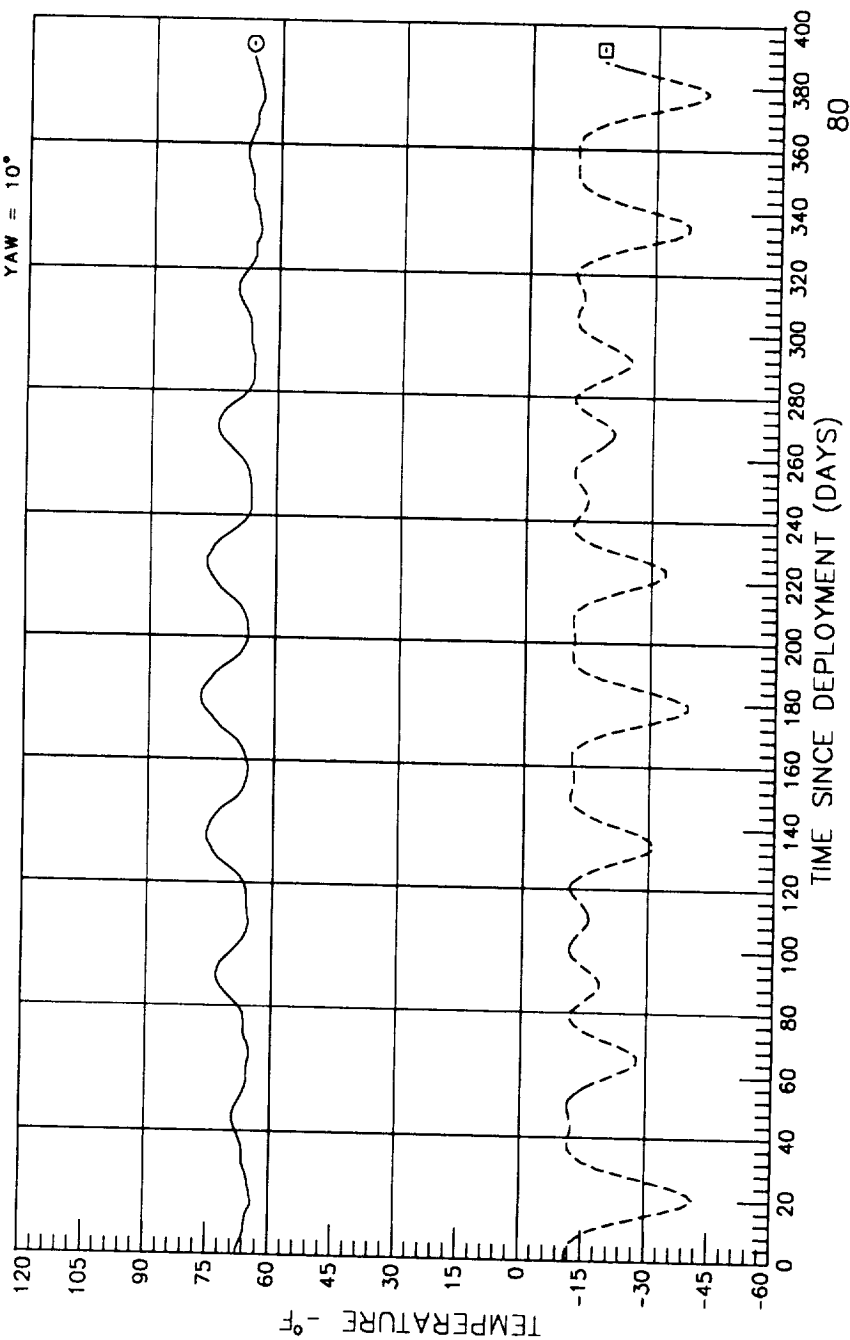
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: H12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

89 TRAY  
 269 SURFACE





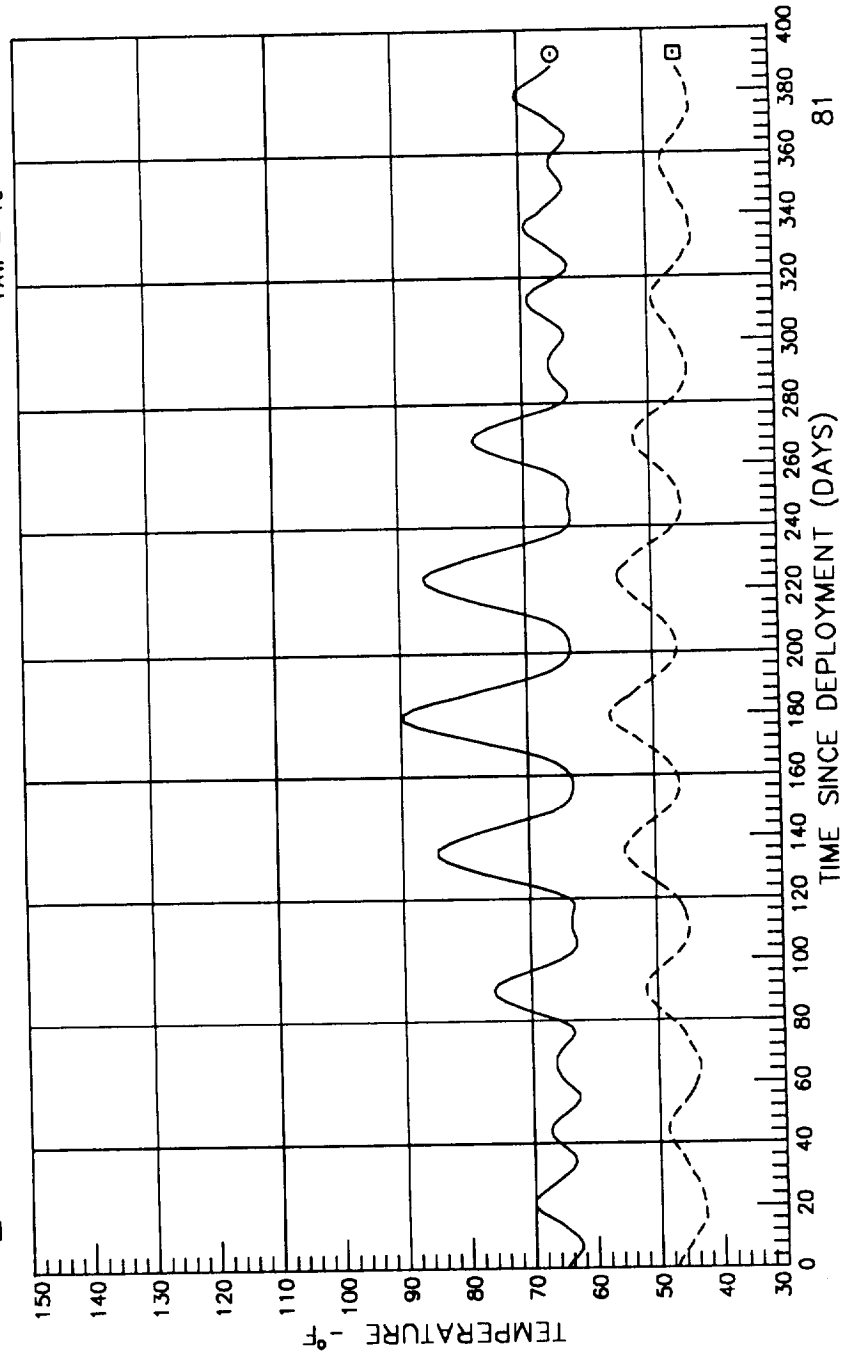
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: G2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 81 TRAY  
 □ 252 SURFACE



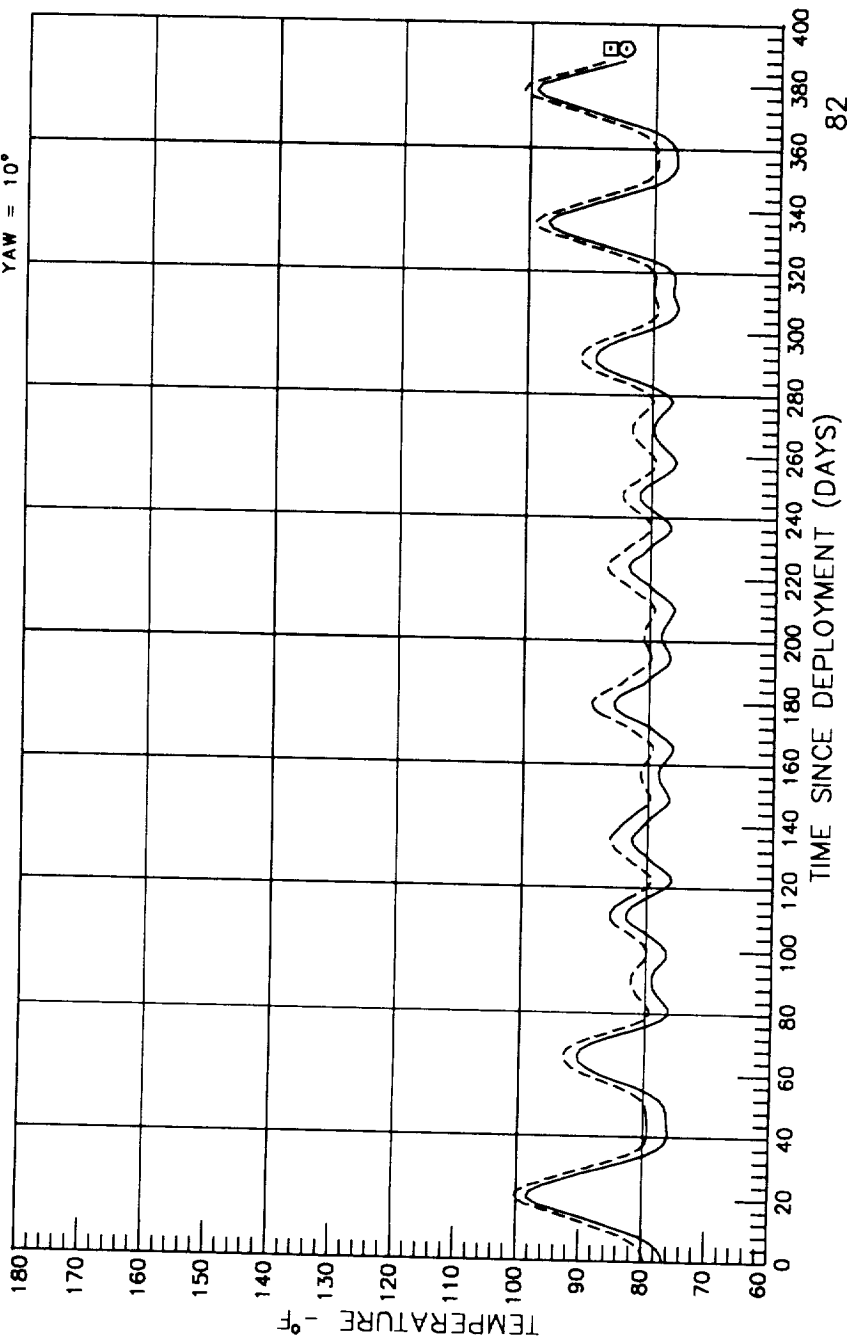
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: G4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 75 TRAY  
 □ - - - 255 SURFACE



# LONG DURATION EXPOSURE FACILITY

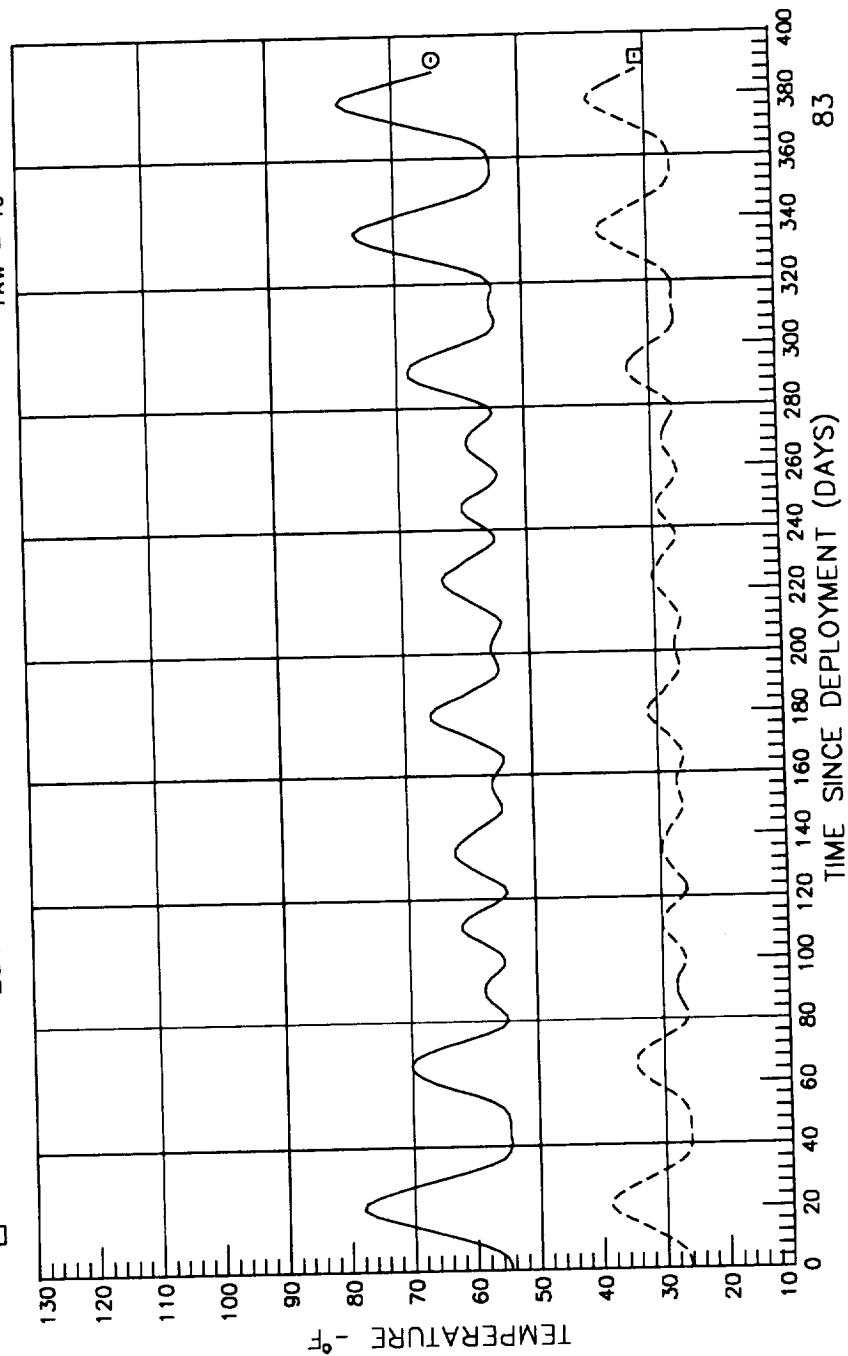
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### LOCATION: G6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

74 TRAY  
 254 SURFACE

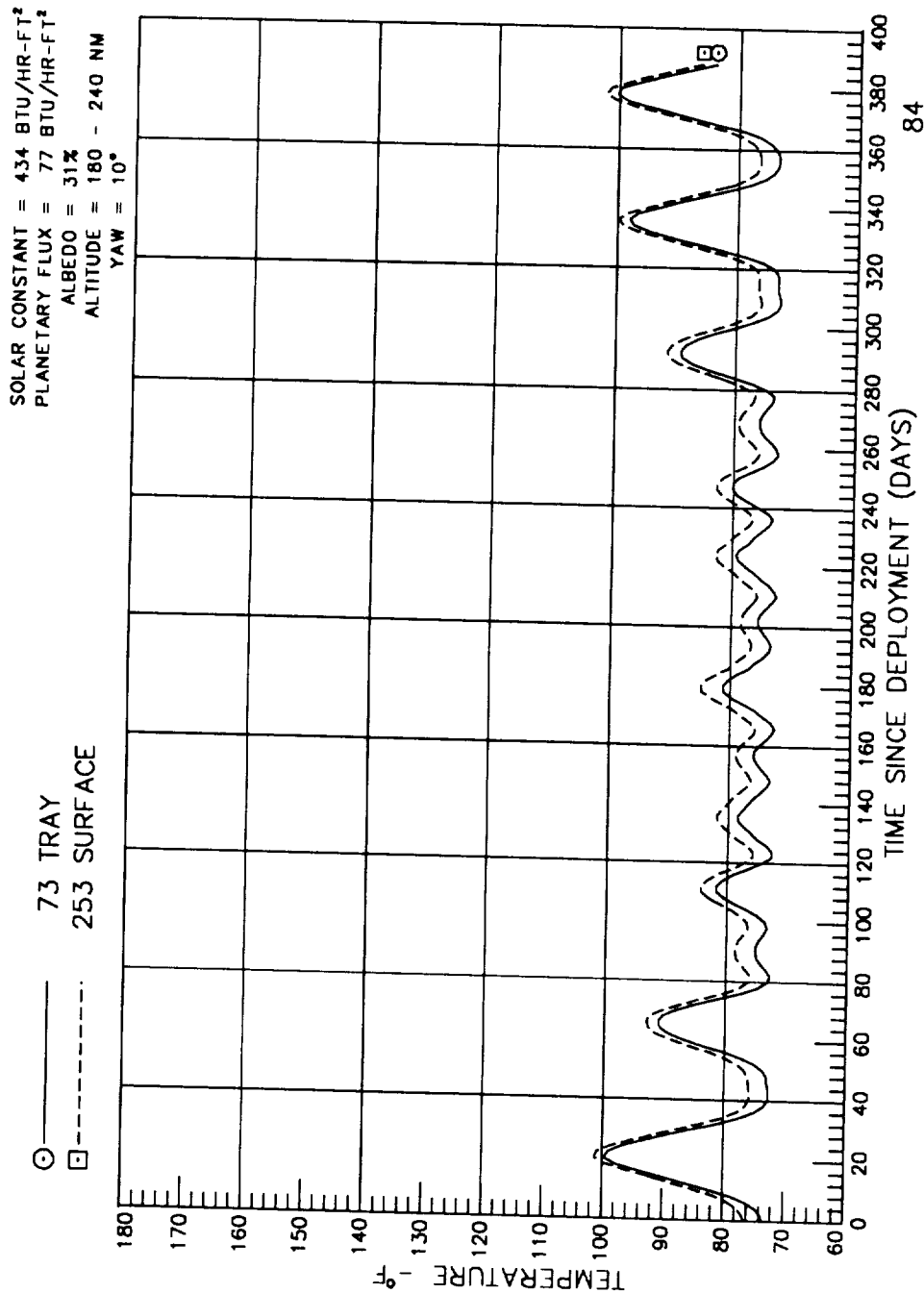
○ 74 TRAY  
 □ 254 SURFACE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

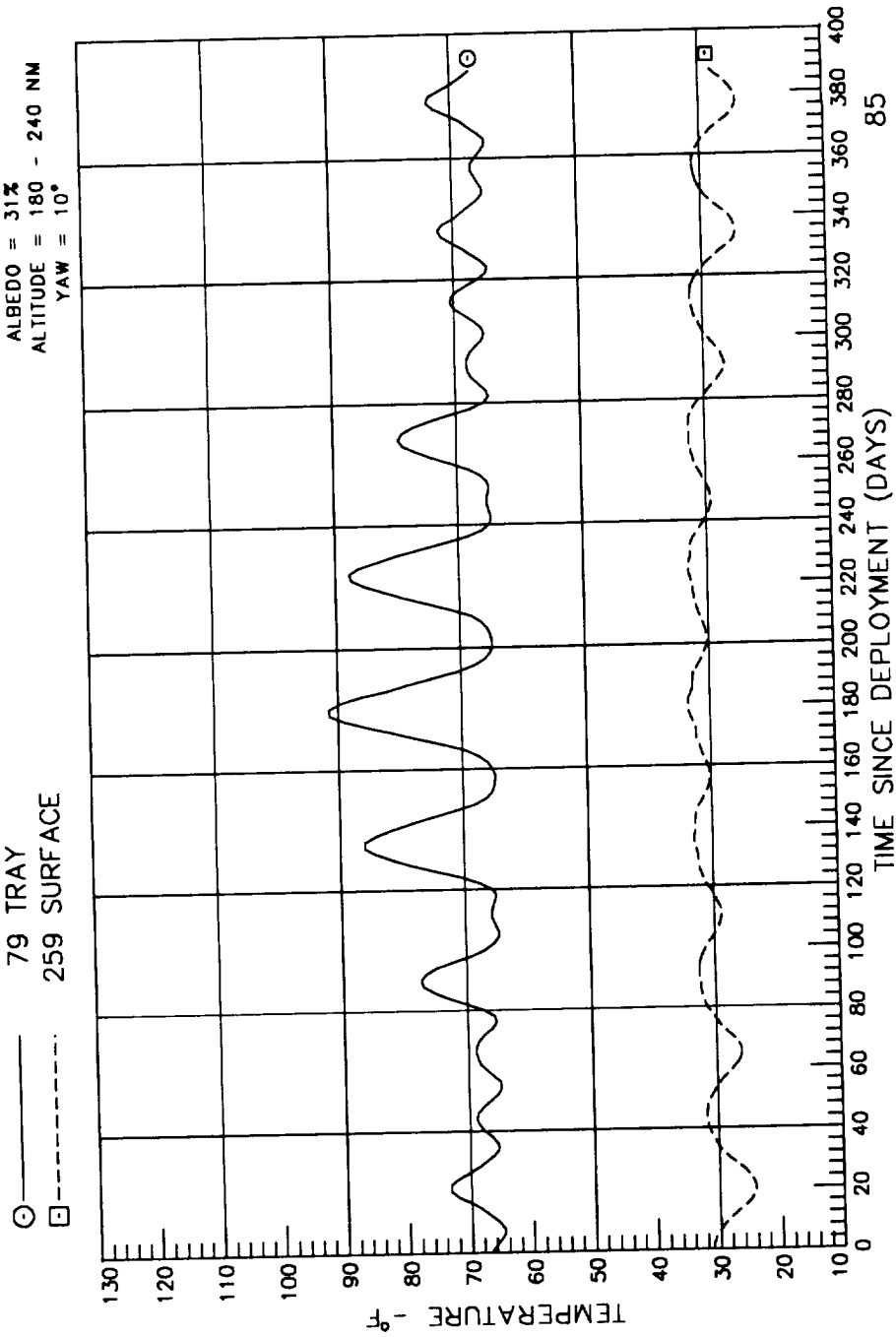
### LOCATION: G8



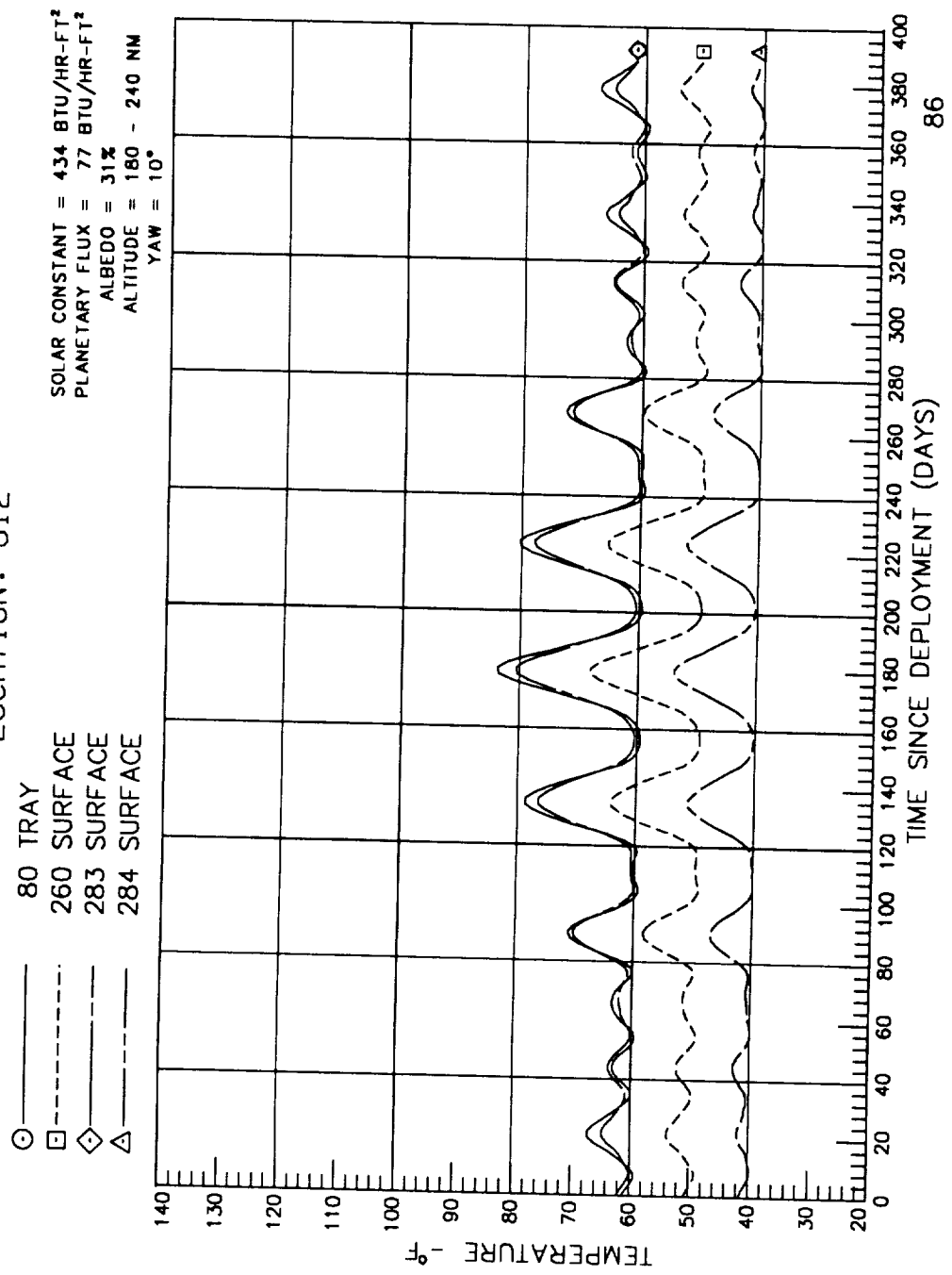
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: G10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

79 TRAY  
 259 SURFACE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 LOCATION: G12



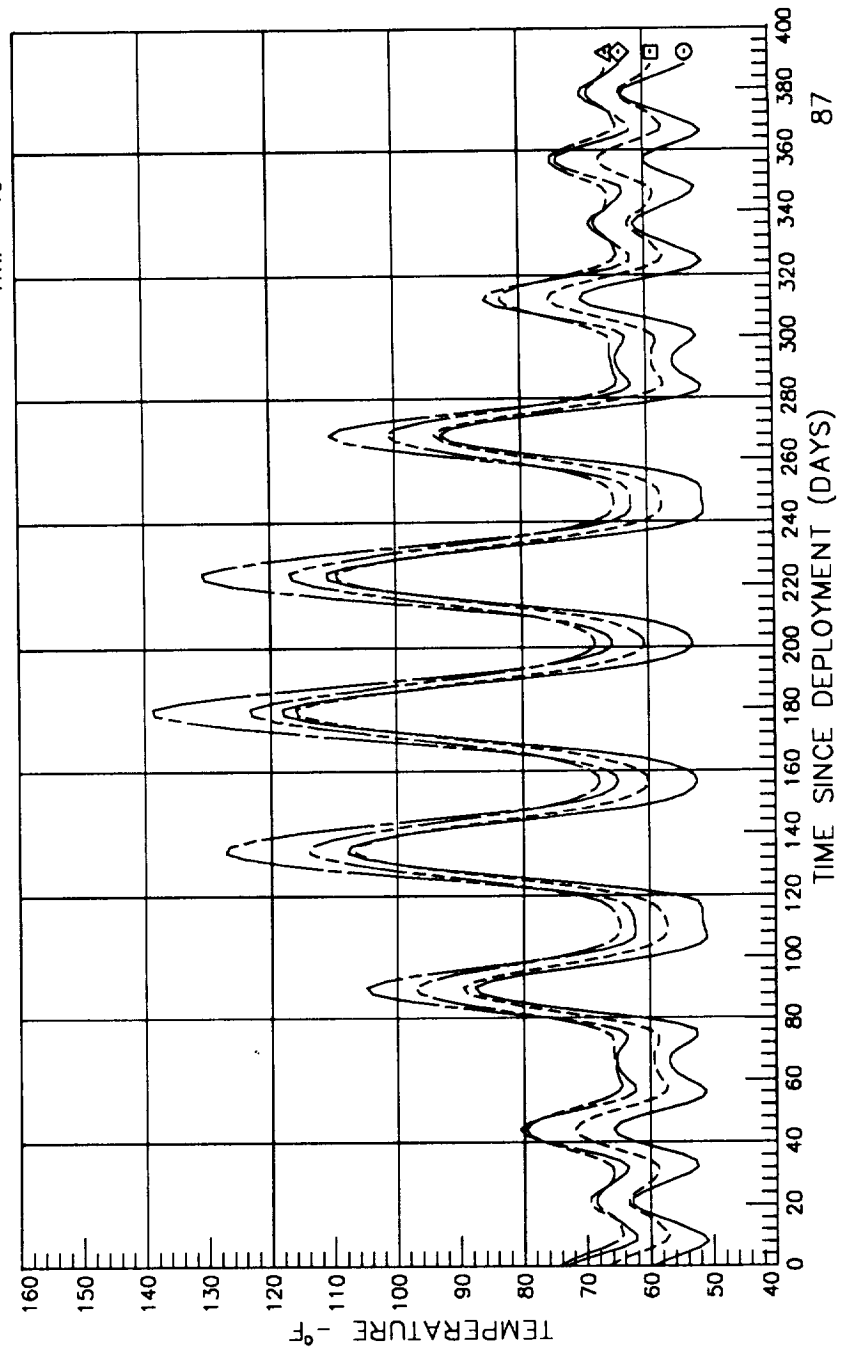
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC A1

○ 163 LONGERON 12-1  
 □ 164 LONGERON 1-2  
 ◇ 175 END LONGRN 12-1  
 △ 176 END LONGRN 1-2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



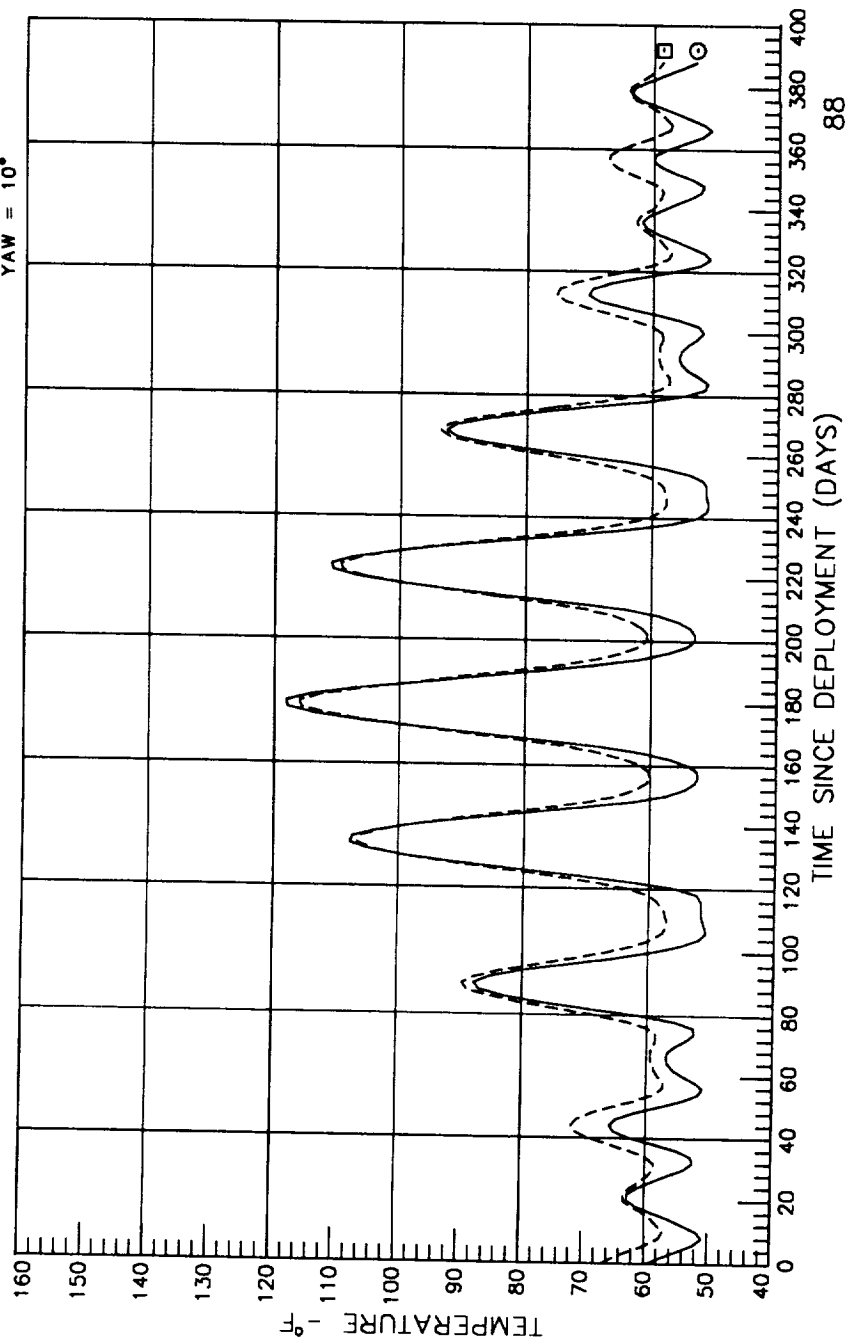
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC B1 & C1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 163 LONGERON 12-1  
 □ 164 LONGERON 1-2



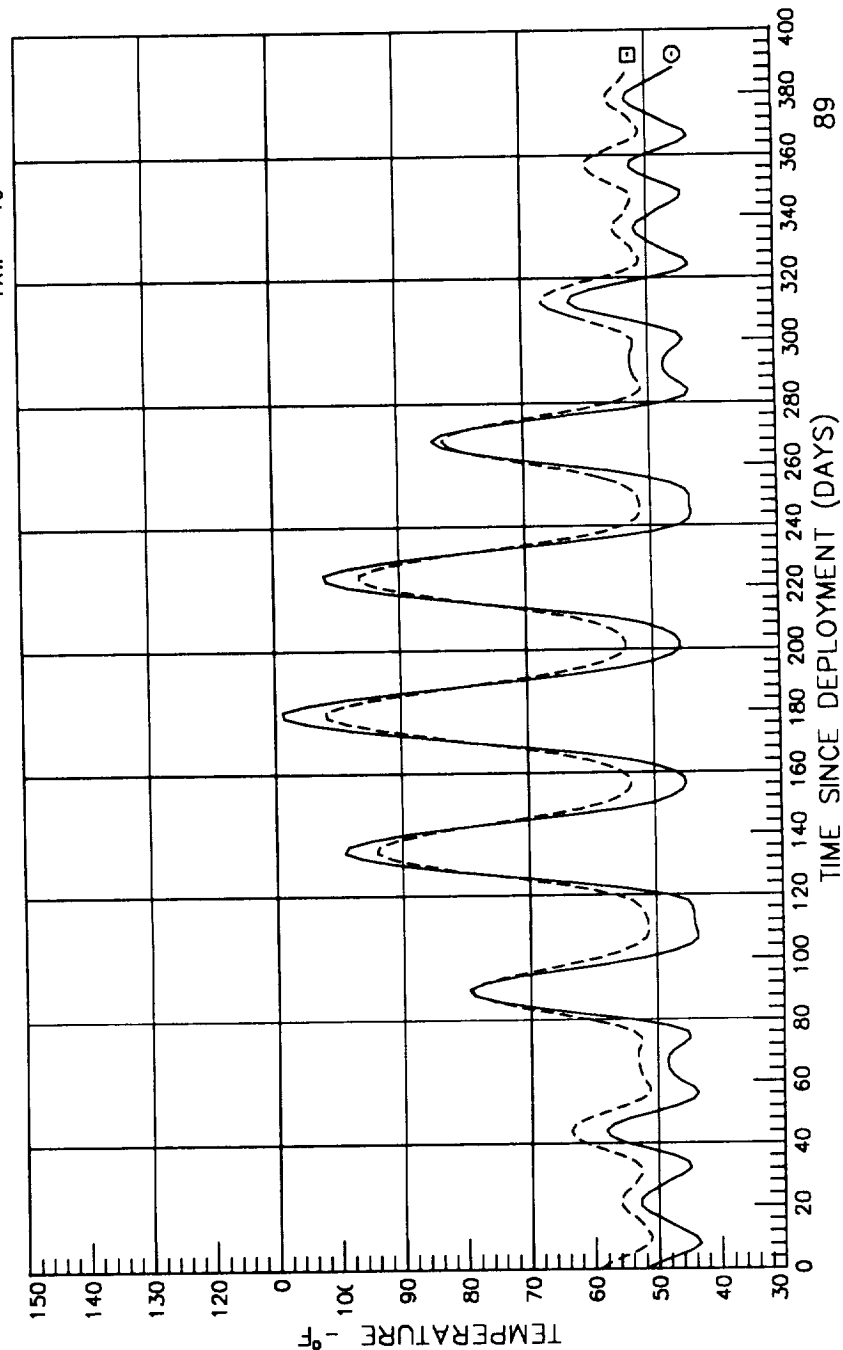


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC D1 & E1

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

240 LONGERON 12-1  
 241 LONGERON 1-2

○ ——— 240 LONGERON 12-1  
 □ - - - - 241 LONGERON 1-2



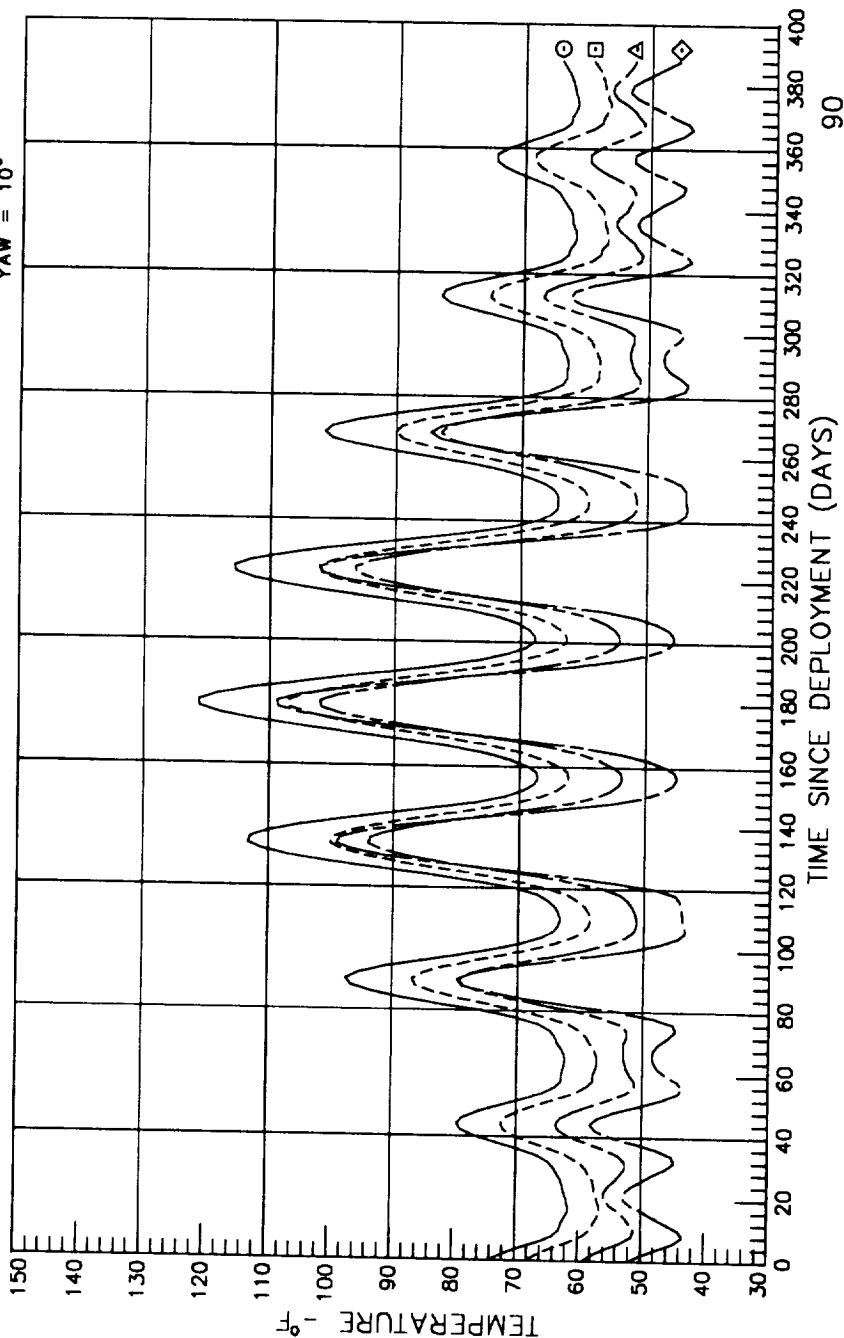
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

STRUCTURE: LOC F1

○ — 187 END LONGRN 12-1  
 □ - - - 188 END LONGRN 1-2  
 ◇ — 240 LONGERON 12-1  
 △ — 241 LONGERON 1-2

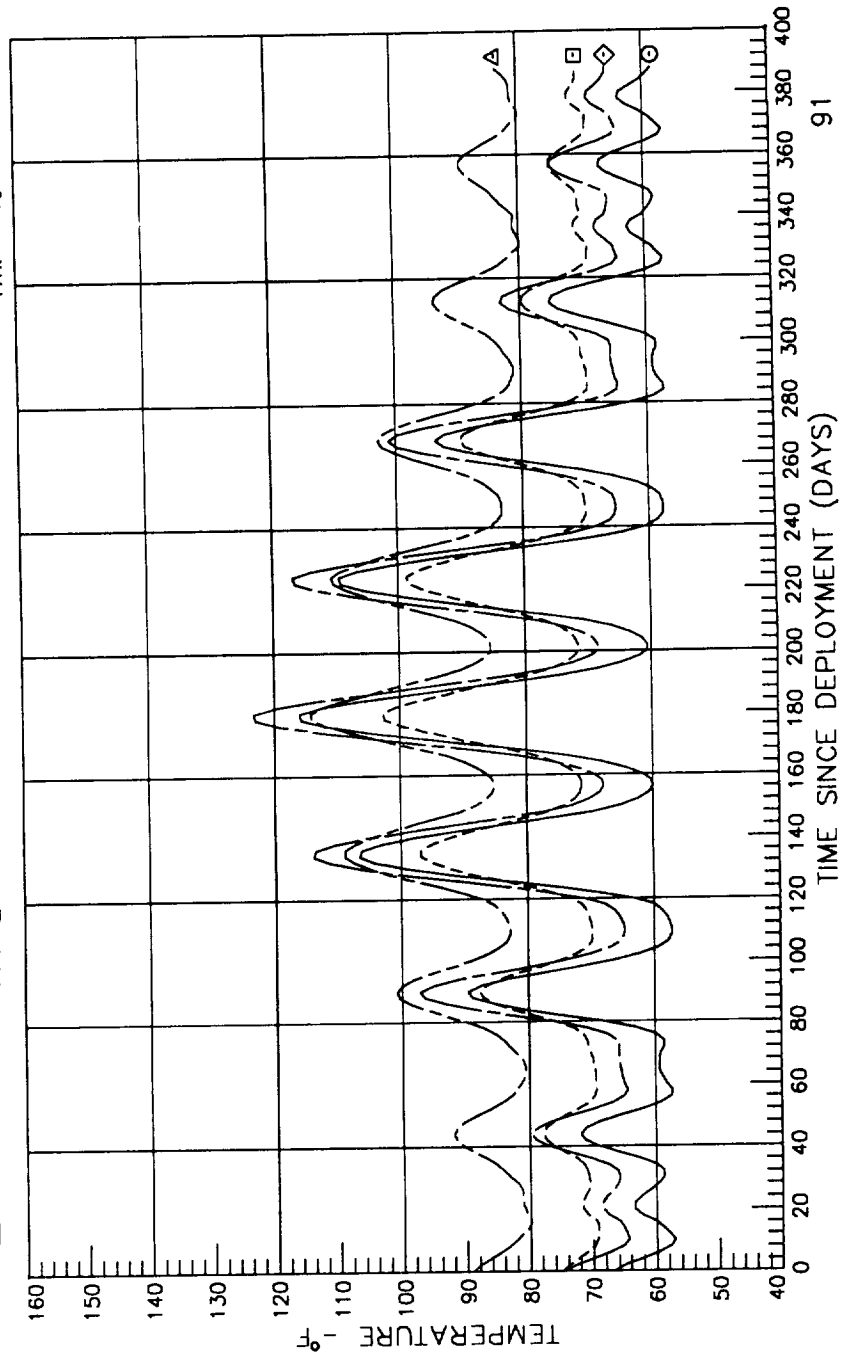
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC A2

○ 164 LONGERON 1-2  
 □ 165 LONGERON 2-3  
 ◇ 176 END LONGRN 1-2  
 △ 177 END LONGRN 2-3

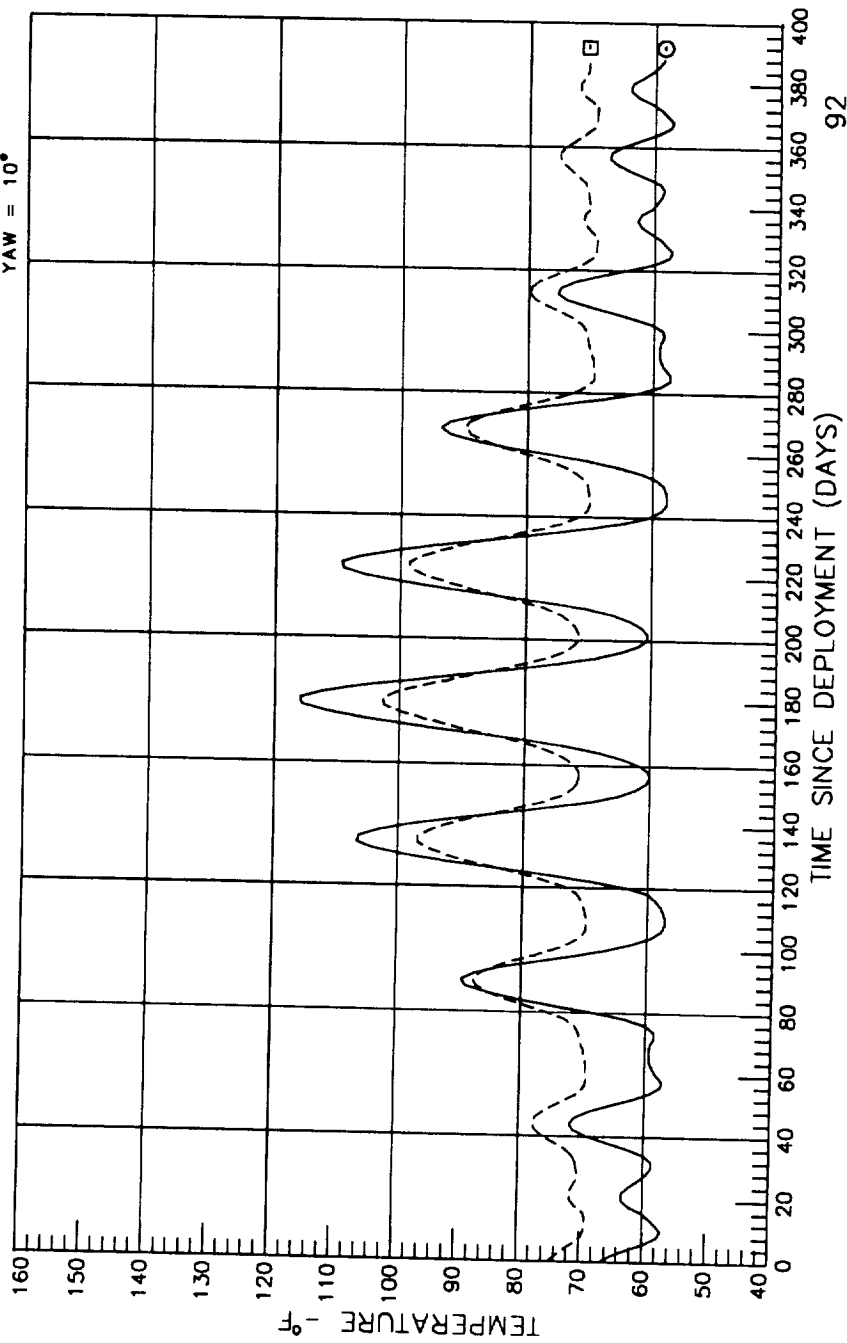
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC B2 & C2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 164 LONGERON 1-2  
 □ - - - 165 LONGERON 2-3



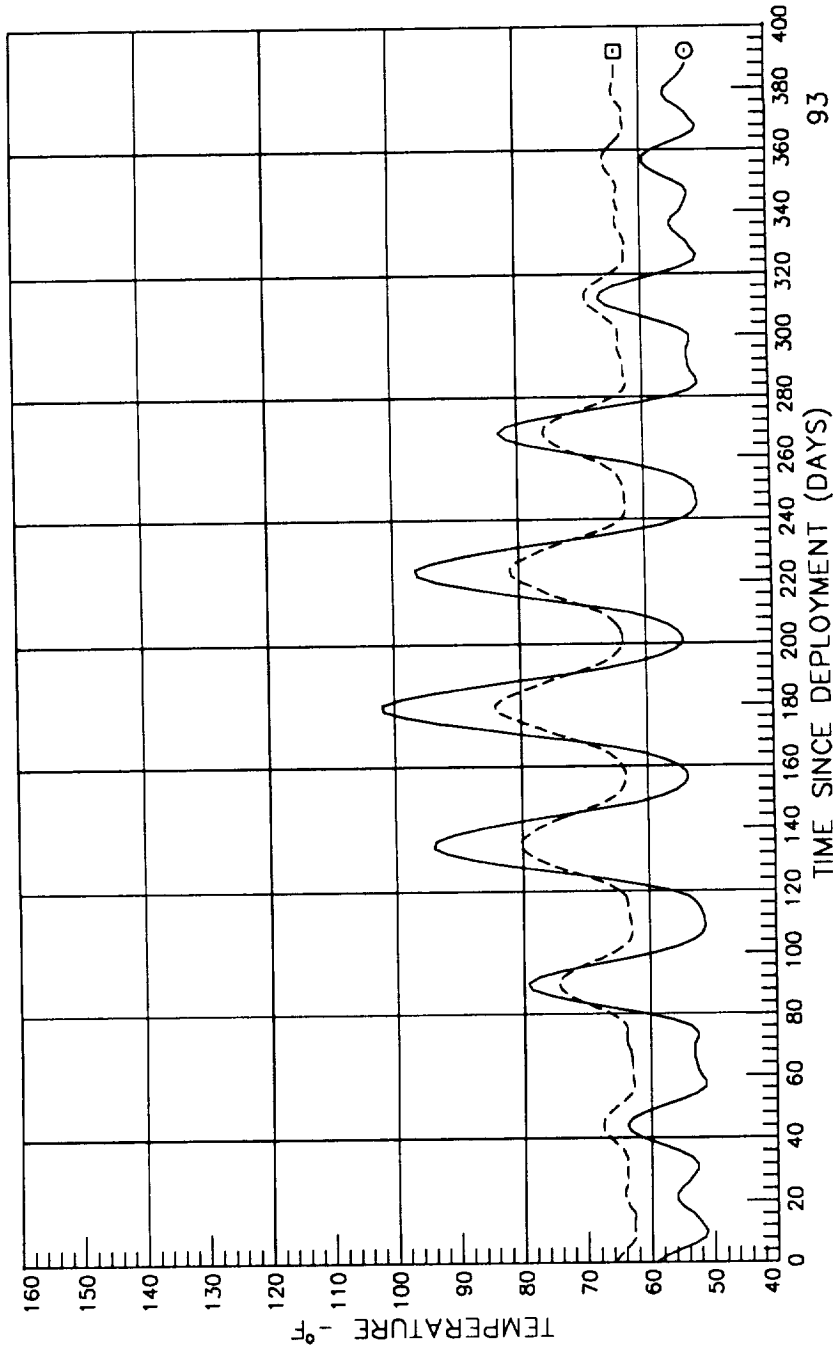
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90  
STRUCTURE: LOC D2 & E2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°

241 LONGERON 1-2  
242 LONGERON 2-3

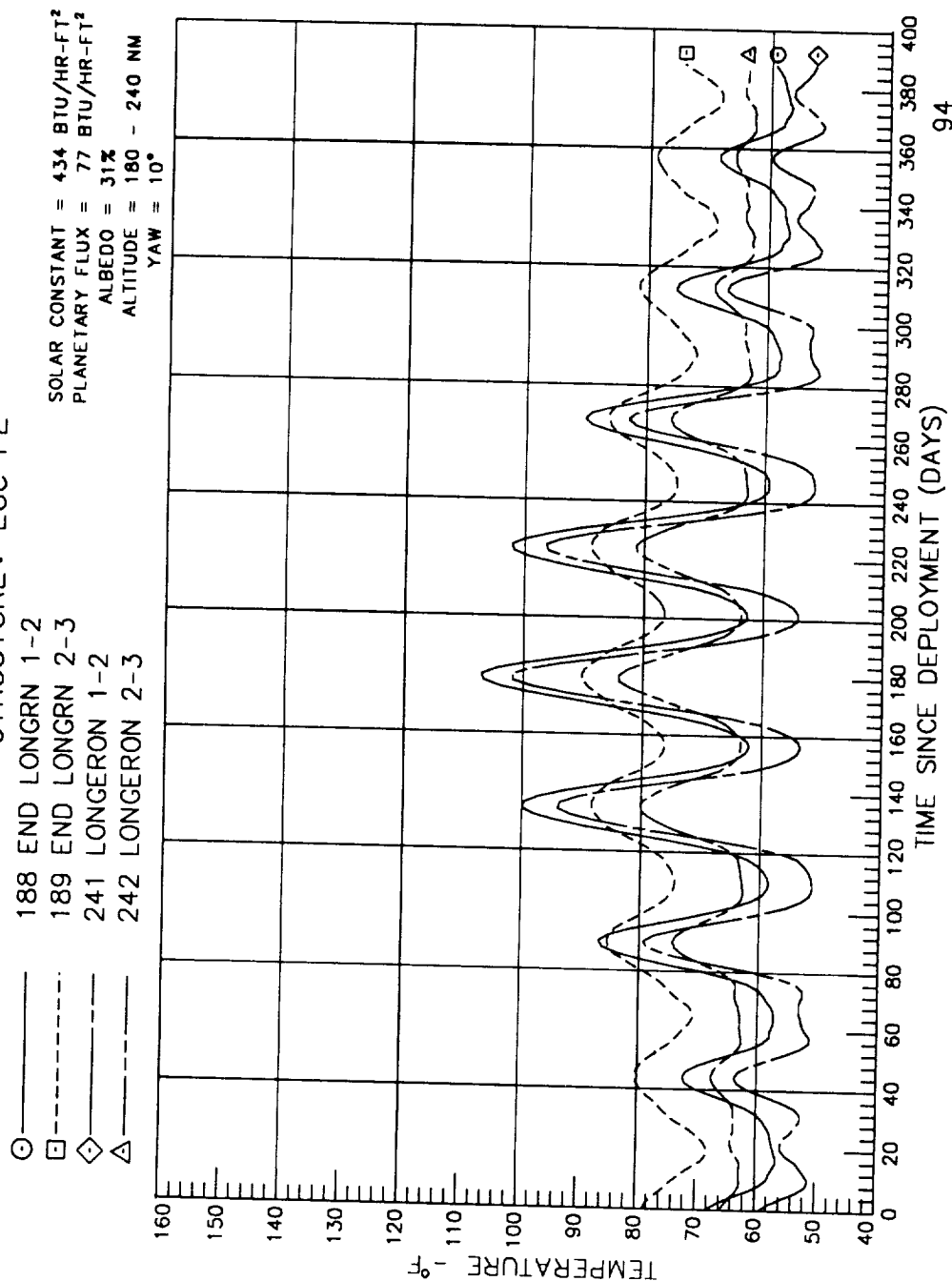
○ ———  
□ - - - - -



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC F2



# LONG DURATION EXPOSURE FACILITY

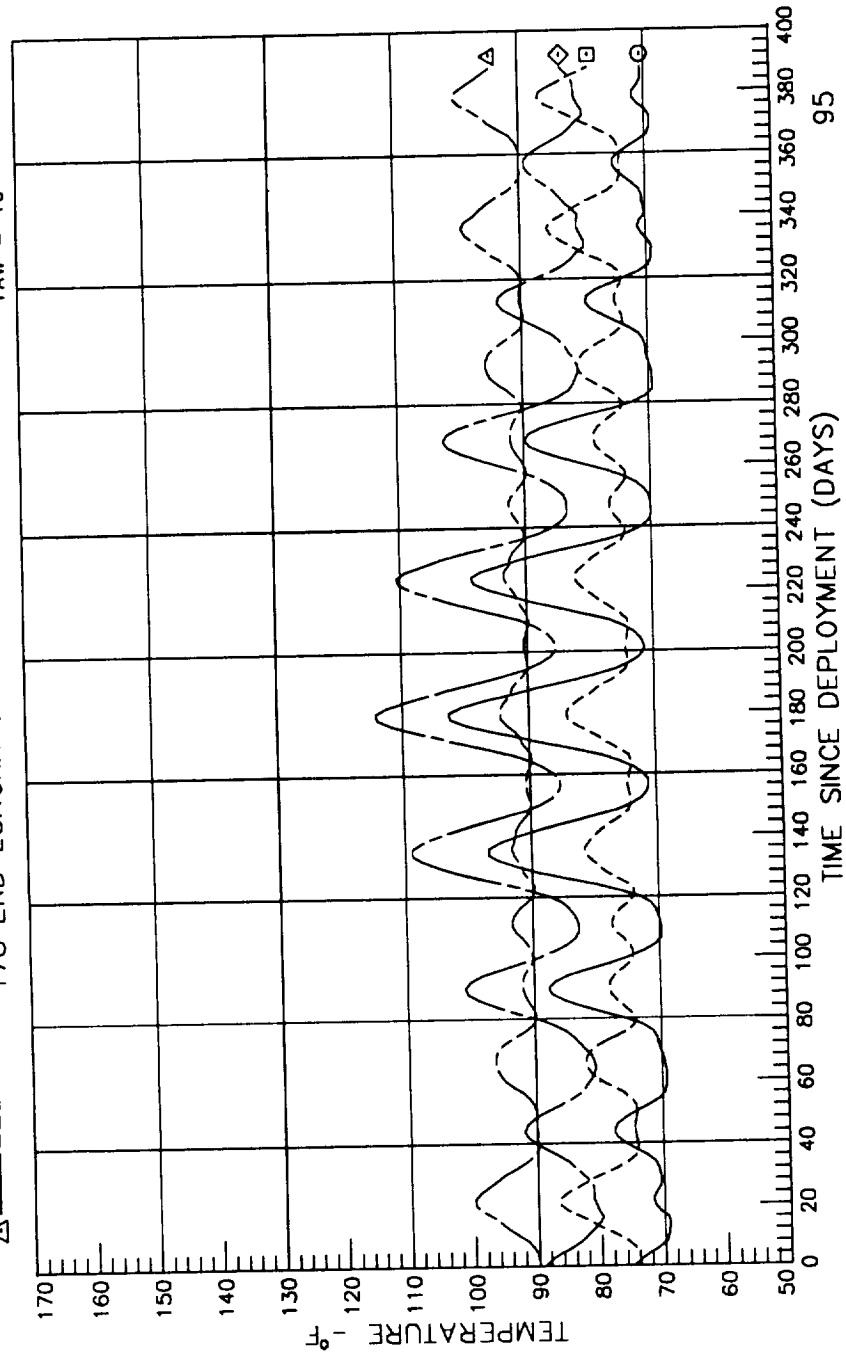
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC A3

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

165 LONGERON 2 -3  
 166 LONGERON 3-4  
 177 END LONGRN 2-3  
 178 END LONGRN 3-4

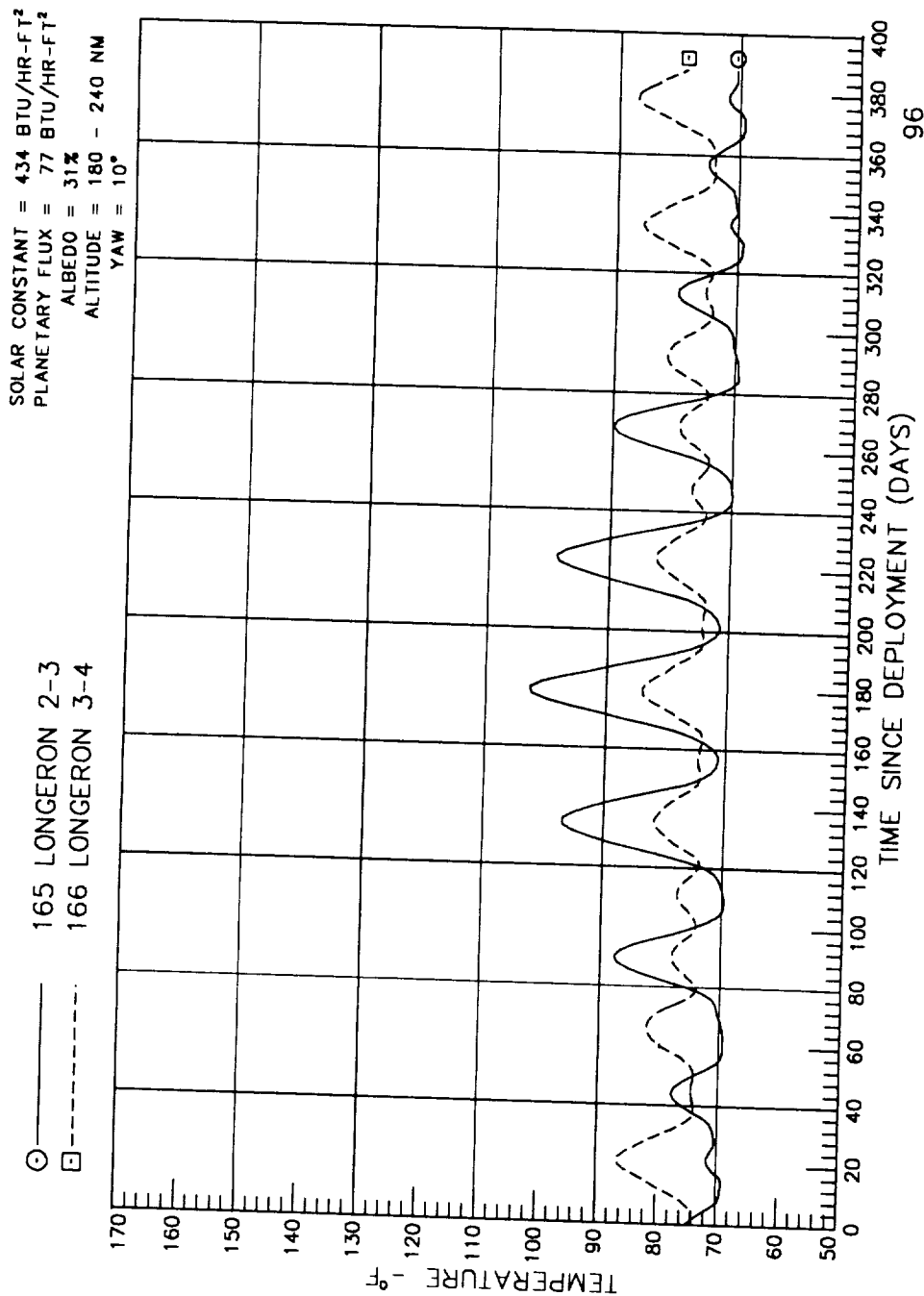
○  
 □  
 ◇  
 △



# LONG DURATION EXPOSURE FACILITY

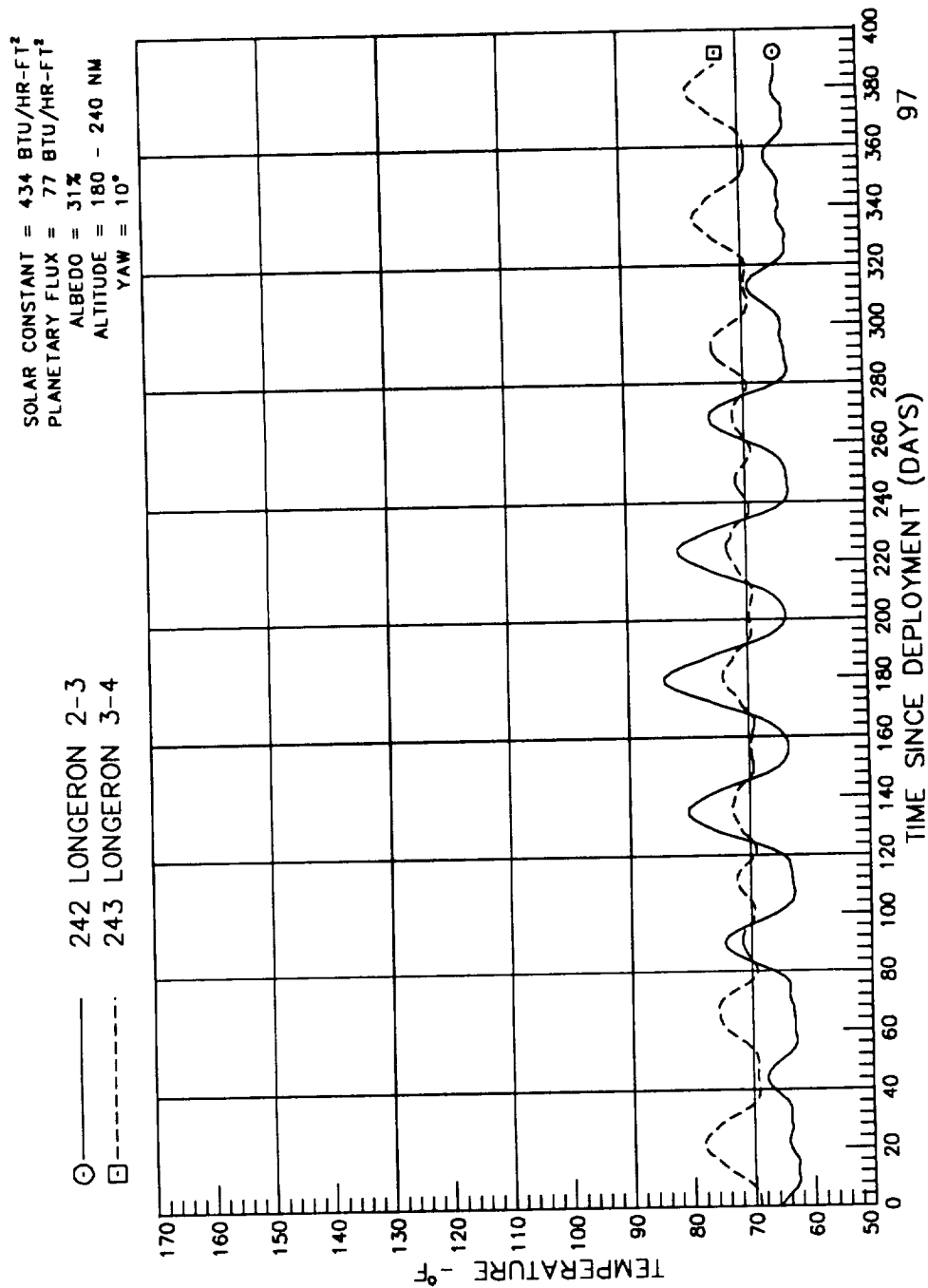
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC B3 & C3





# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC D3 & E3



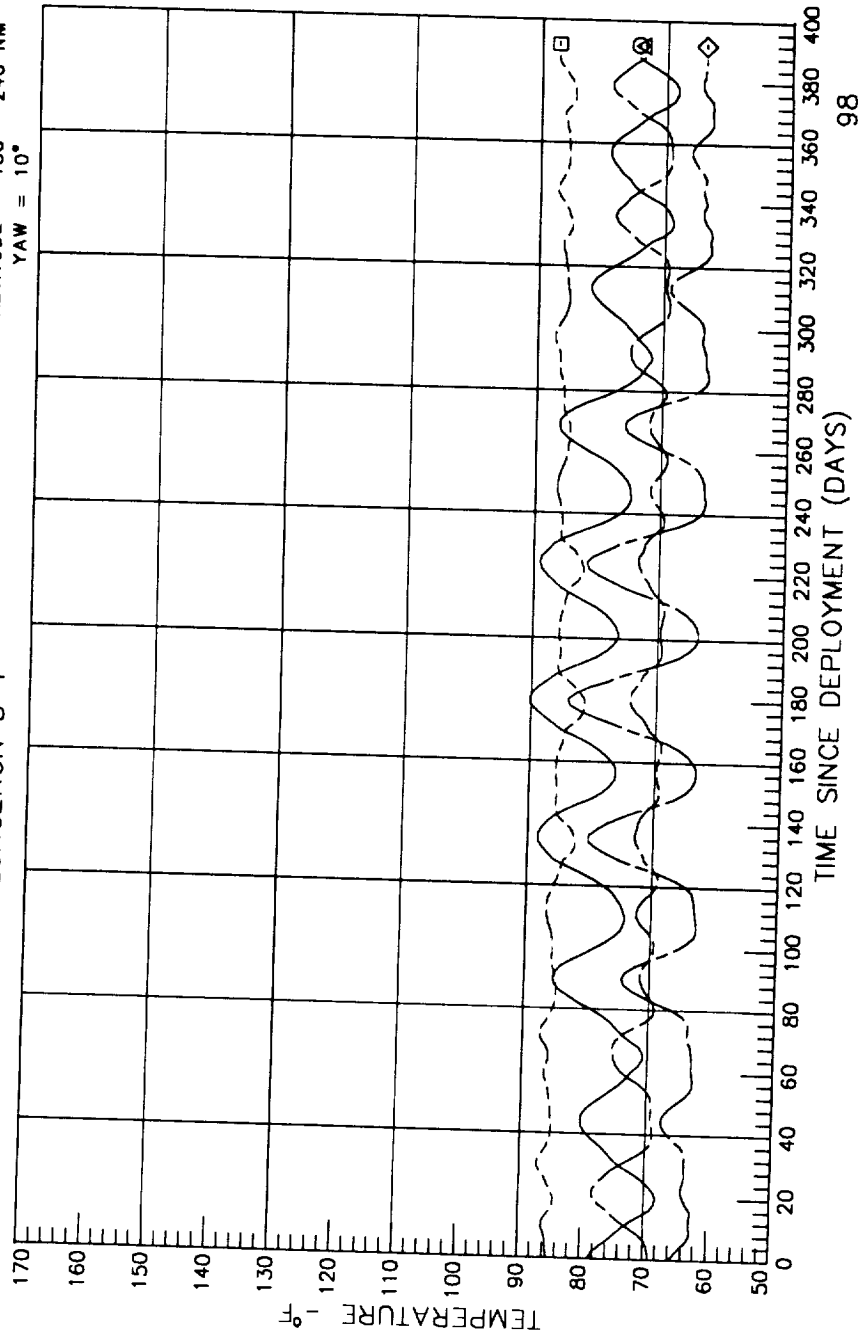
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC F3

○ — 189 END LONGRN 2-3  
 □ — 190 END LONGRN 3-4  
 ◇ — 242 LONGERON 2-3  
 △ — 243 LONGERON 3-4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



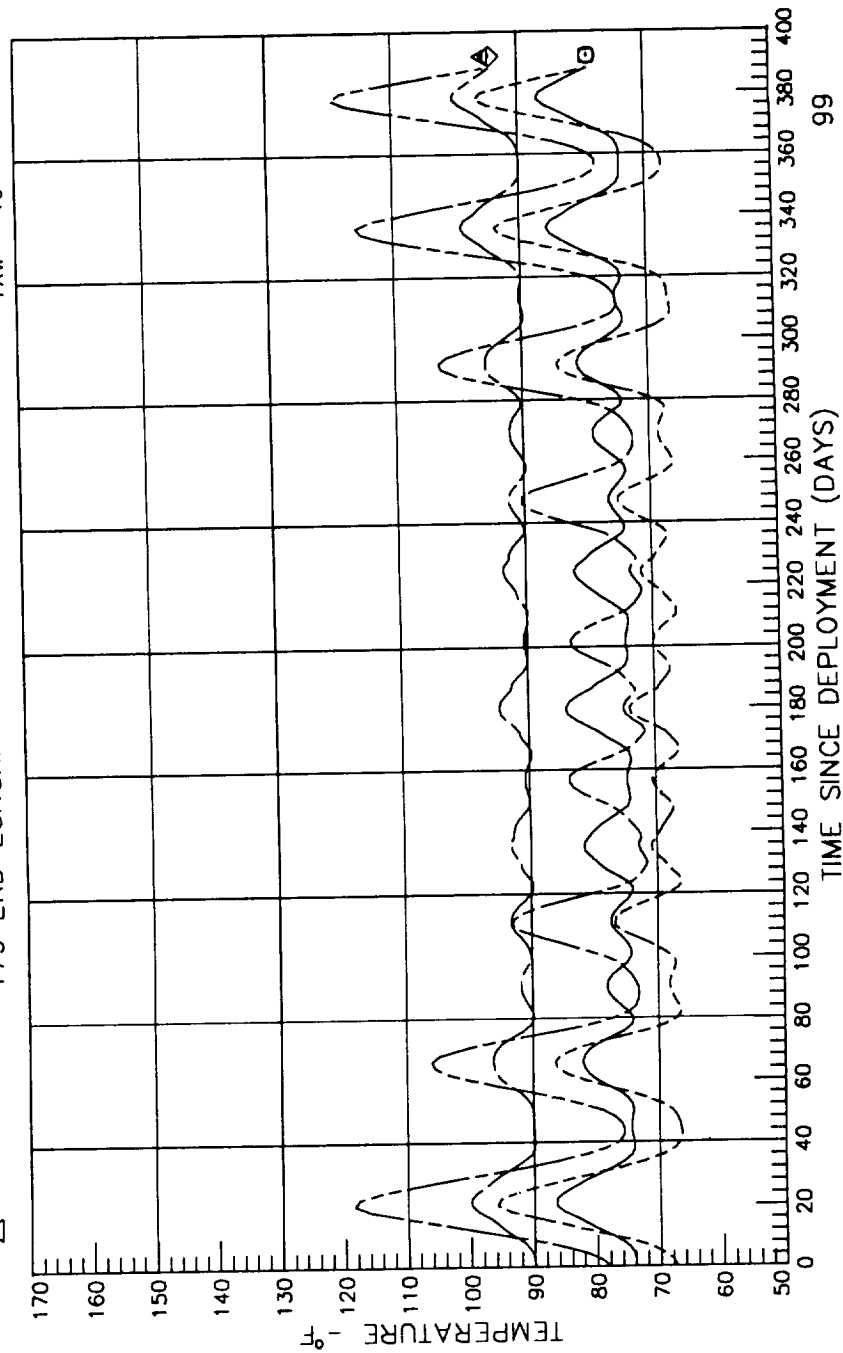
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC A4

○ 166 LONGERON 3-4  
 □ 167 LONGERON 4-5  
 ◇ 178 END LONGRN 3-4  
 △ 179 END LONGRN 4-5

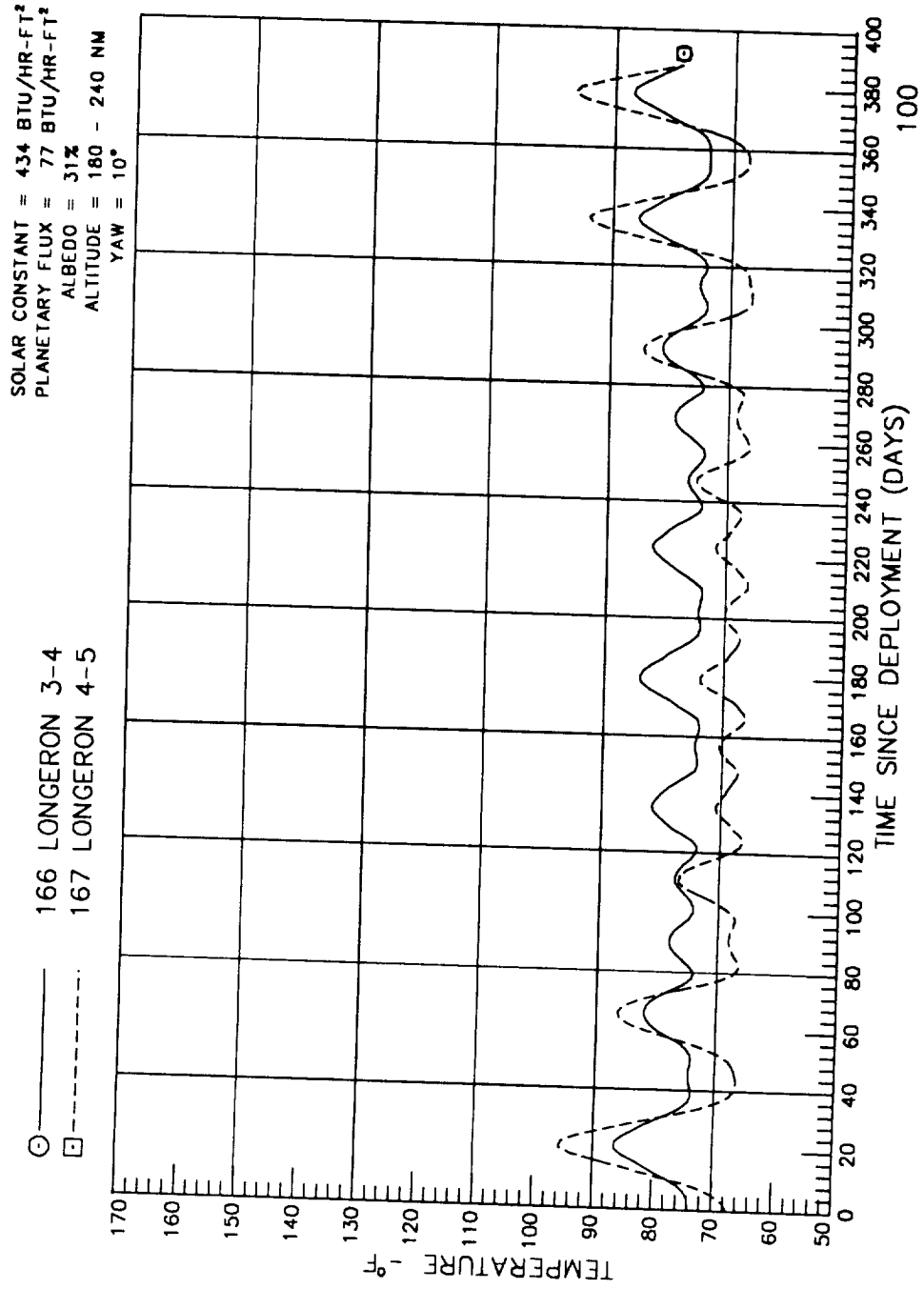
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC B4 & C4

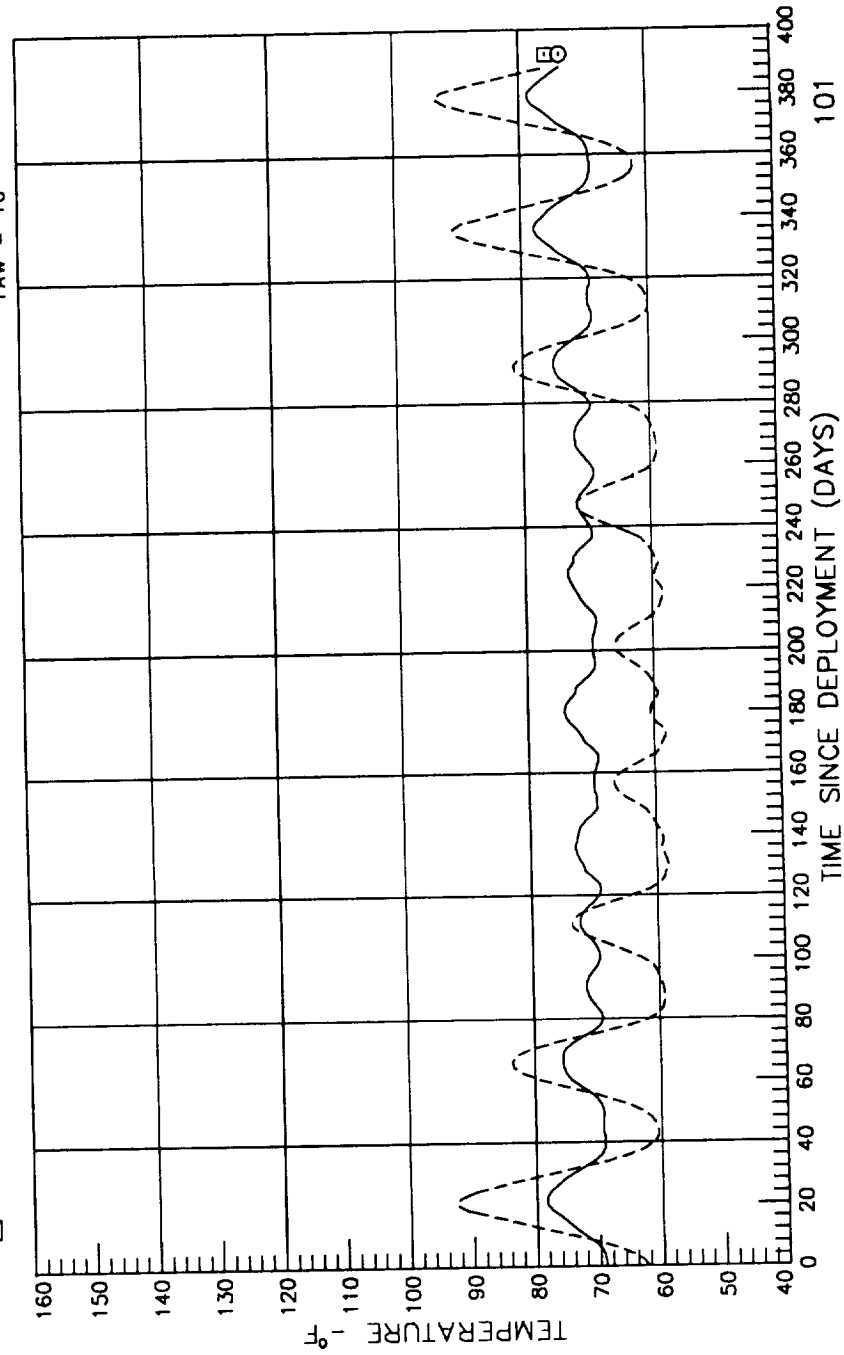


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC D4 & E4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

243 LONGERON 3-4  
 244 LONGERON 4-5

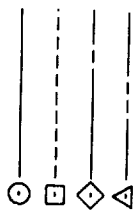
○ ——— 243 LONGERON 3-4  
 □ - - - - 244 LONGERON 4-5



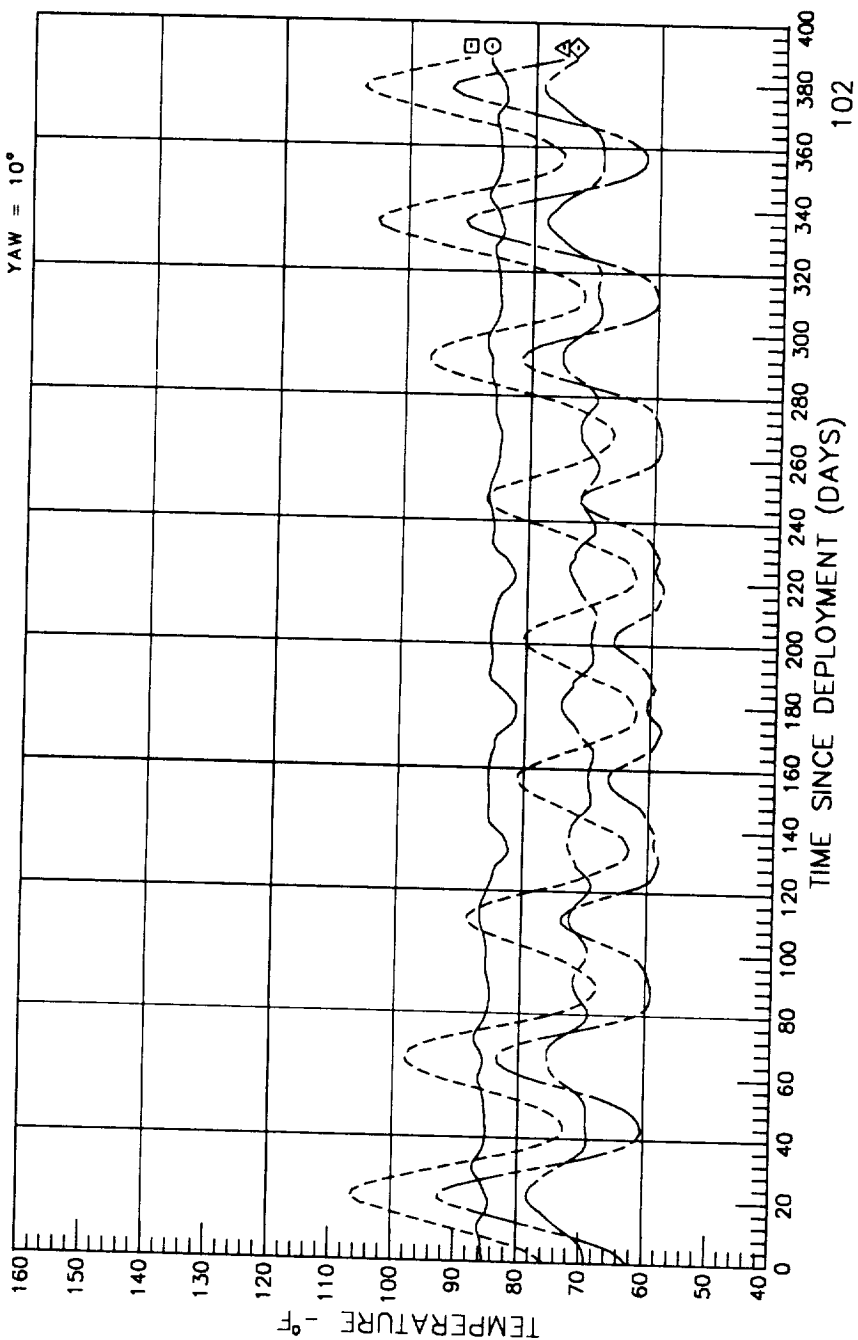
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

STRUCTURE: LOC F4



SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



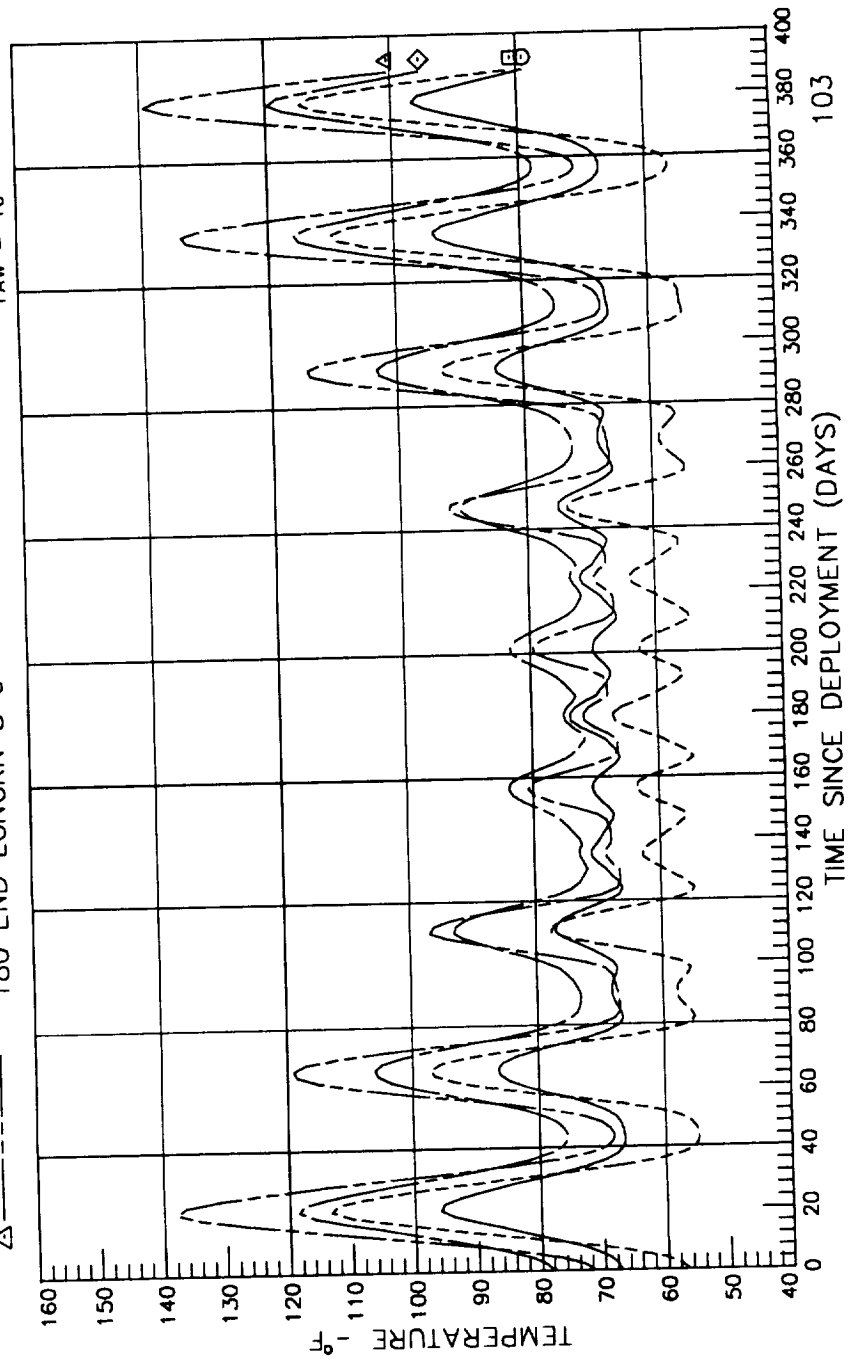
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC A5

○ 167 LONGERON 4-5  
 □ 168 LONGERON 5-6  
 ◇ 179 END LONGRN 4-5  
 △ 180 END LONGRN 5-6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

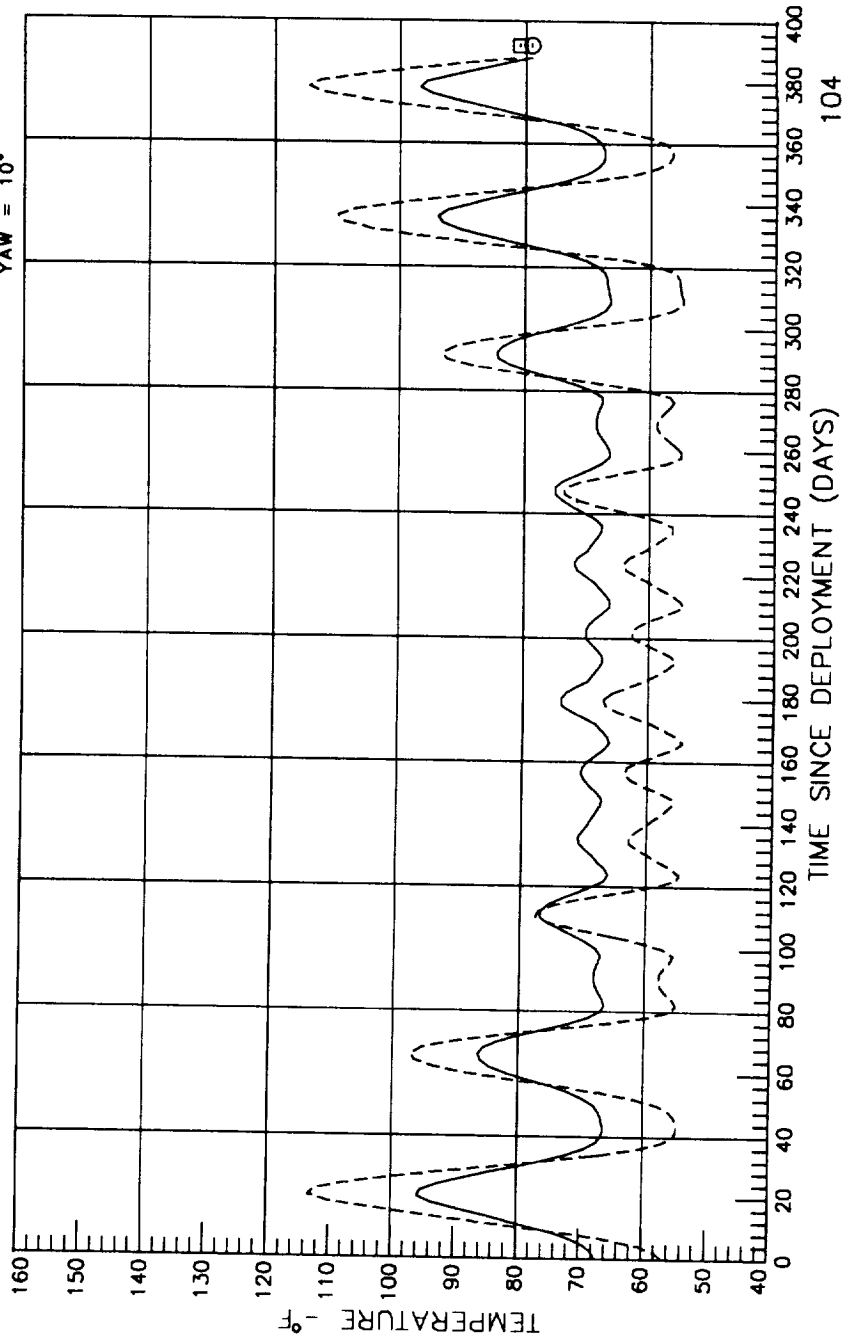
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC B5 & C5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

167 LONGERON 4-5  
 168 LONGERON 5-6

○ ———  
 □ - - - -





# LONG DURATION EXPOSURE FACILITY

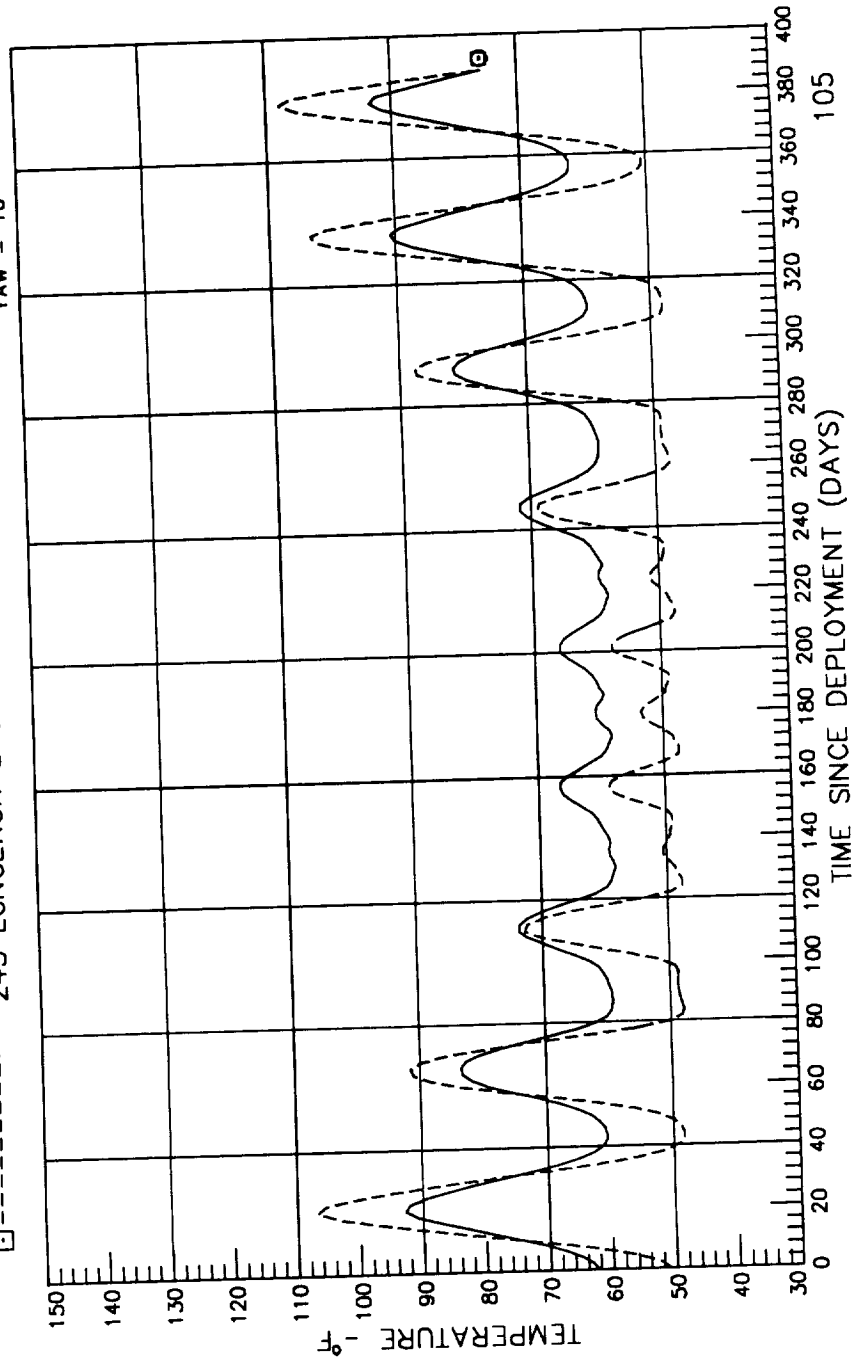
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC D5 & E5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

244 LONGERON 4-5  
 245 LONGERON 5-6

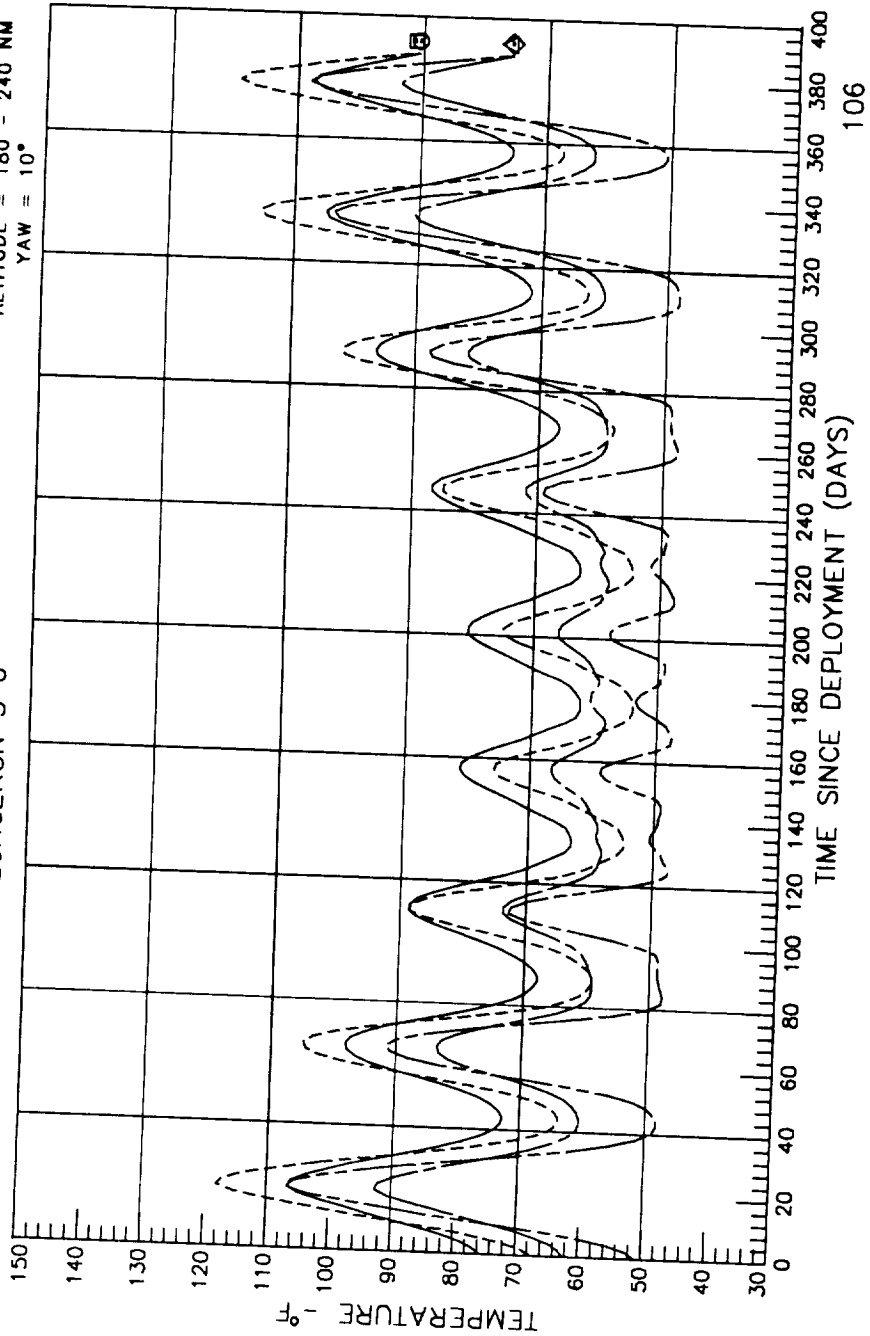
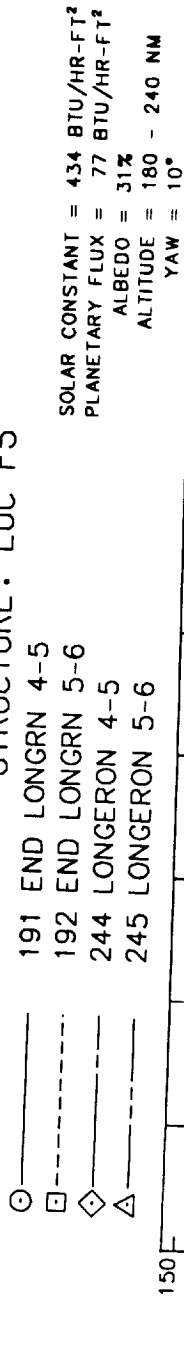
○ ——— 244 LONGERON 4-5  
 □ - - - - 245 LONGERON 5-6



# LONG DURATION EXPOSURE FACILITY

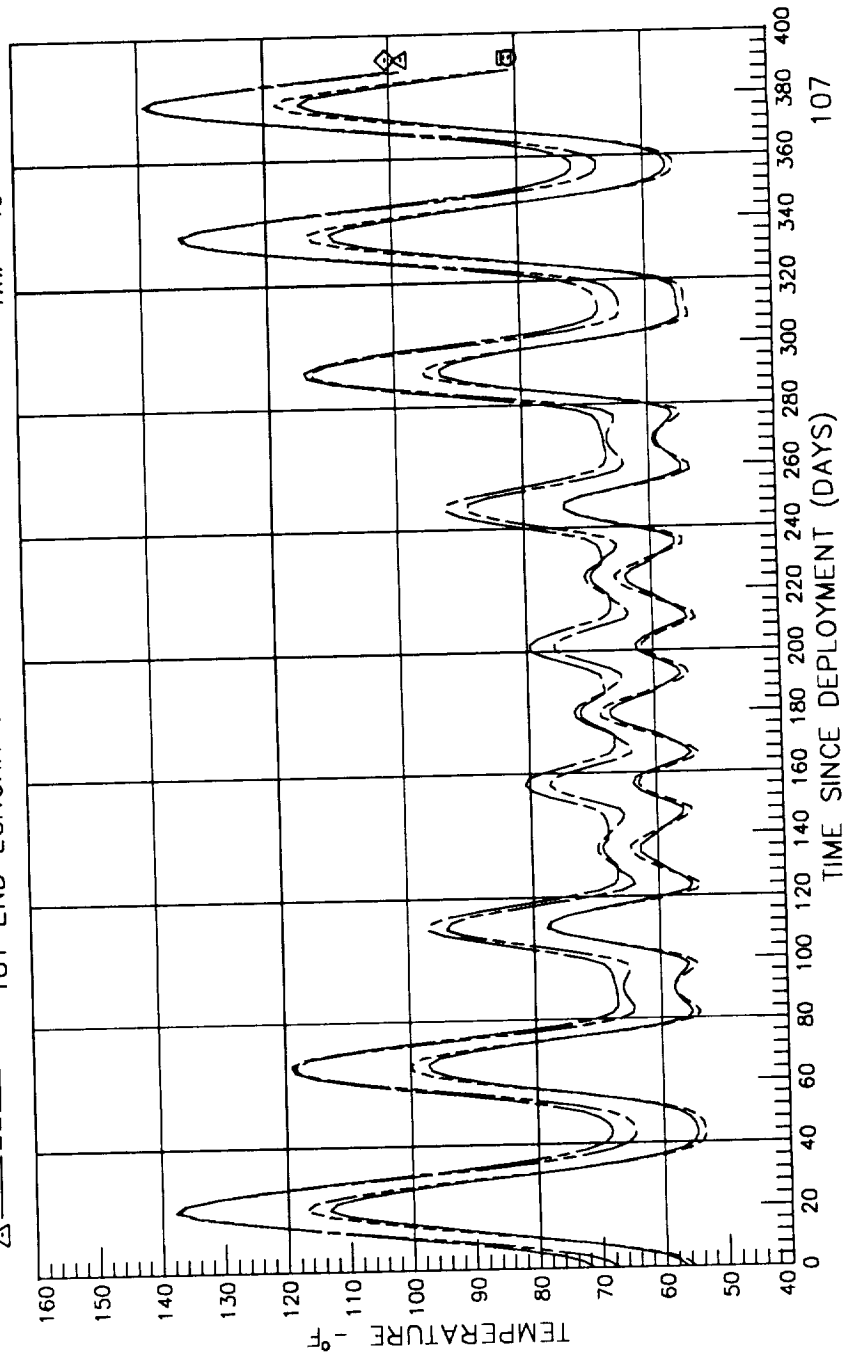
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC F5

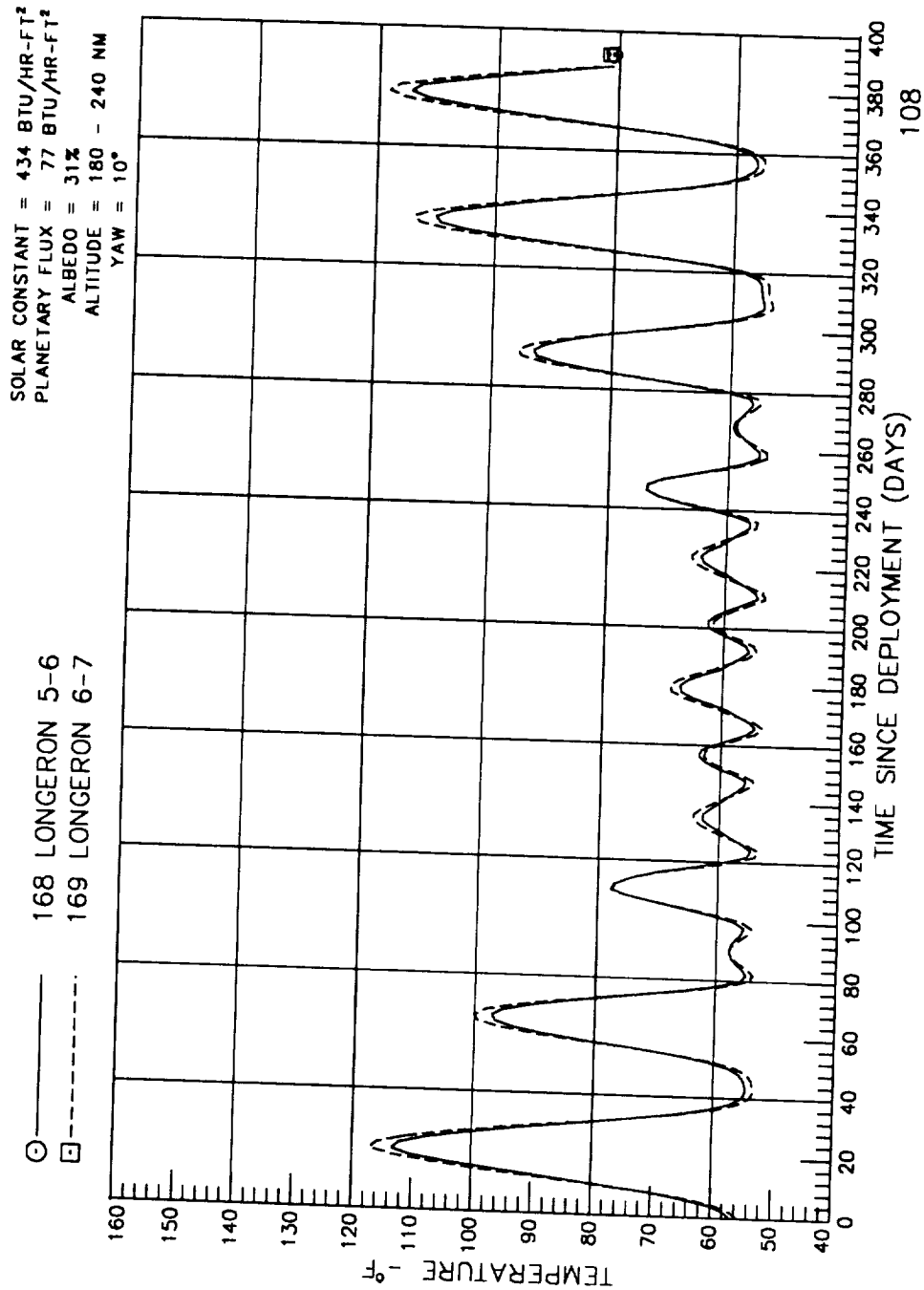


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC A6

○	168 LONGERON 5-6	SOLAR CONSTANT = 434 BTU/HR-FT <sup>2</sup>
□	169 LONGERON 6-7	PLANETARY FLUX = 77 BTU/HR-FT <sup>2</sup>
◇	180 END LONGRN 5-6	ALBEDO = 31%
△	181 END LONGRN 6-7	ALTITUDE = 180 - 240 NM
		YAW = 10°



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC B6 & C6



# LONG DURATION EXPOSURE FACILITY

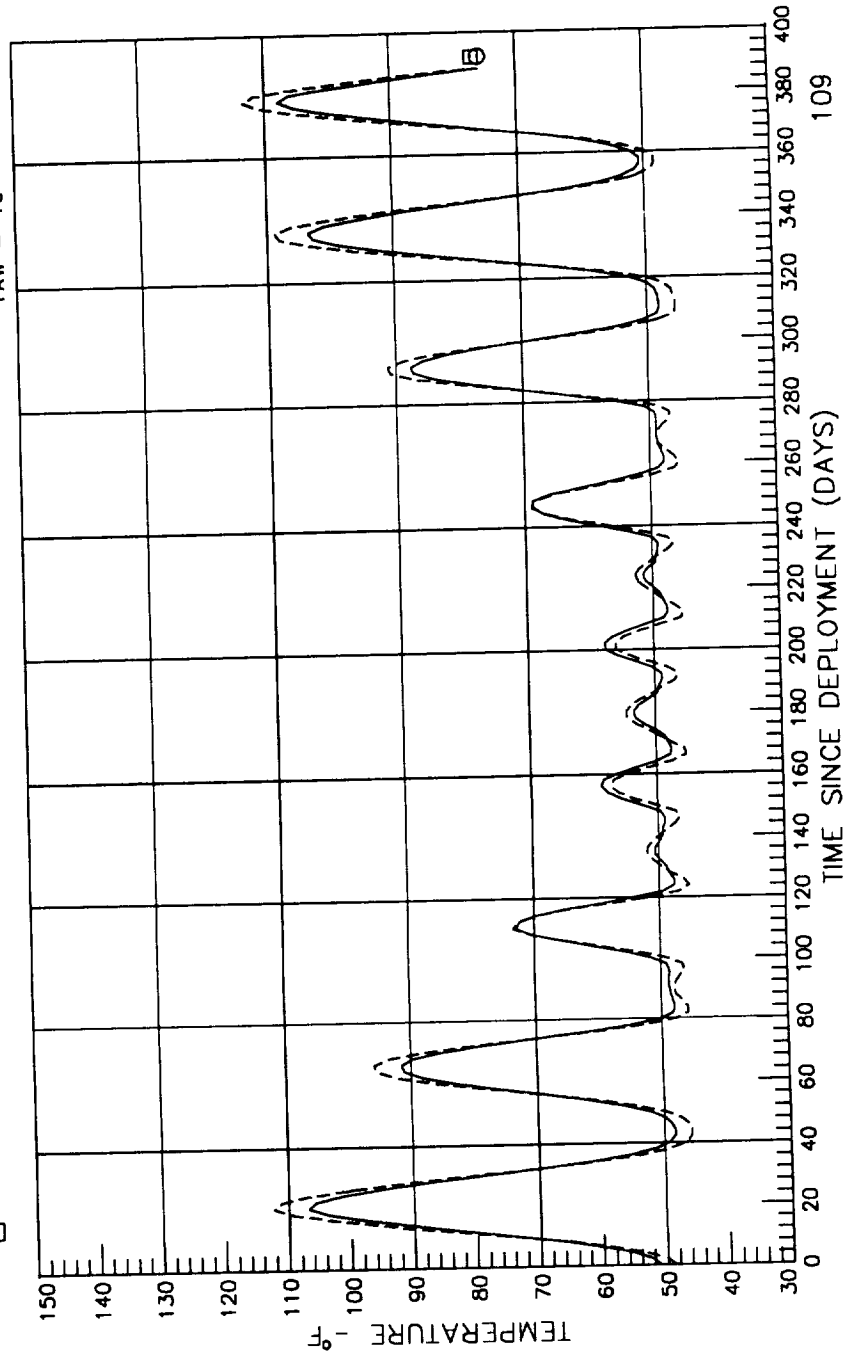
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC D6 & E6

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

245 LONGERON 5-6  
 246 LONGERON 6-7

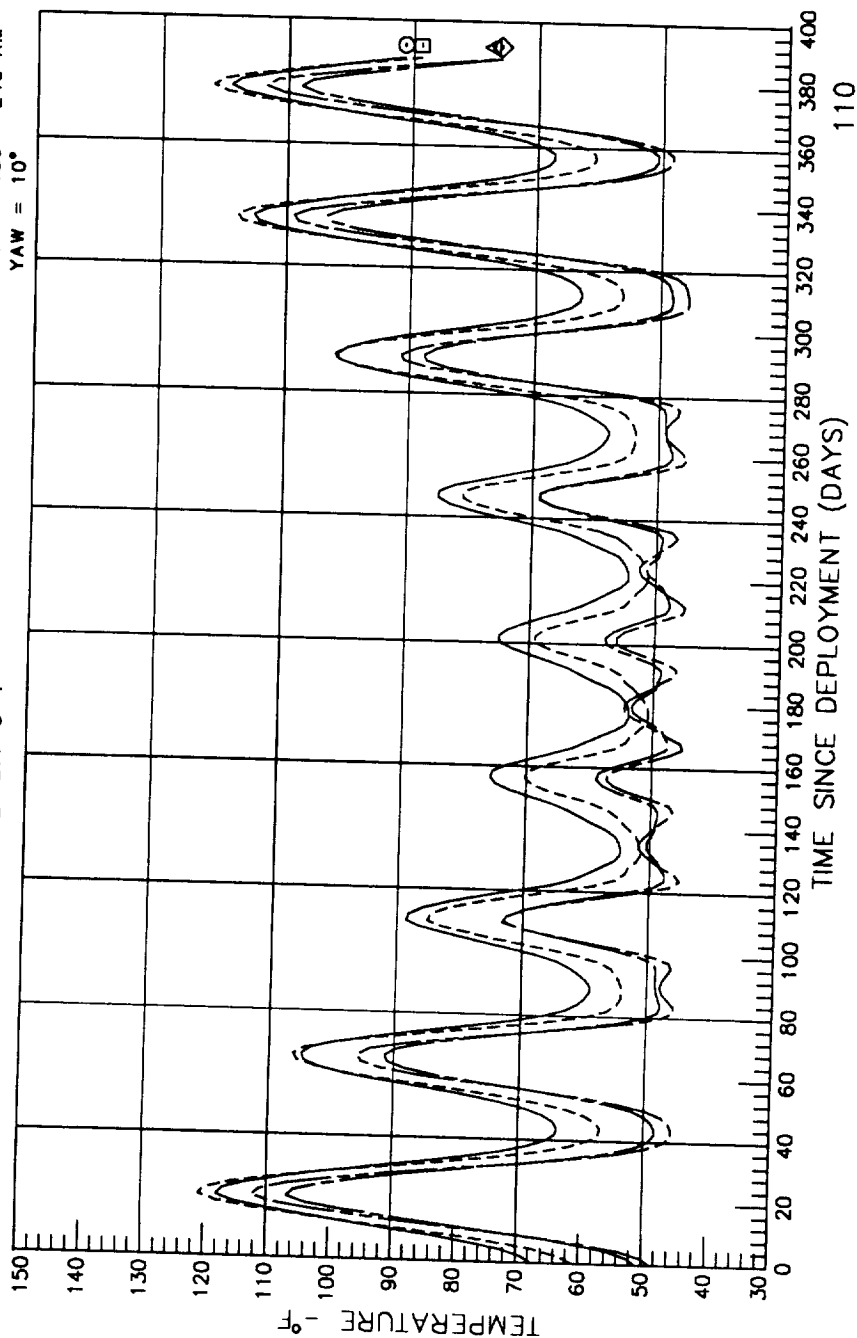
○ — 245 LONGERON 5-6  
 □ - - - 246 LONGERON 6-7



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC F6

○ 192 END LONGRN 5-6  
 □ 193 END LONGRN 6-7  
 ◇ 245 LONGERON 5-6  
 △ 246 LONGERON 6-7

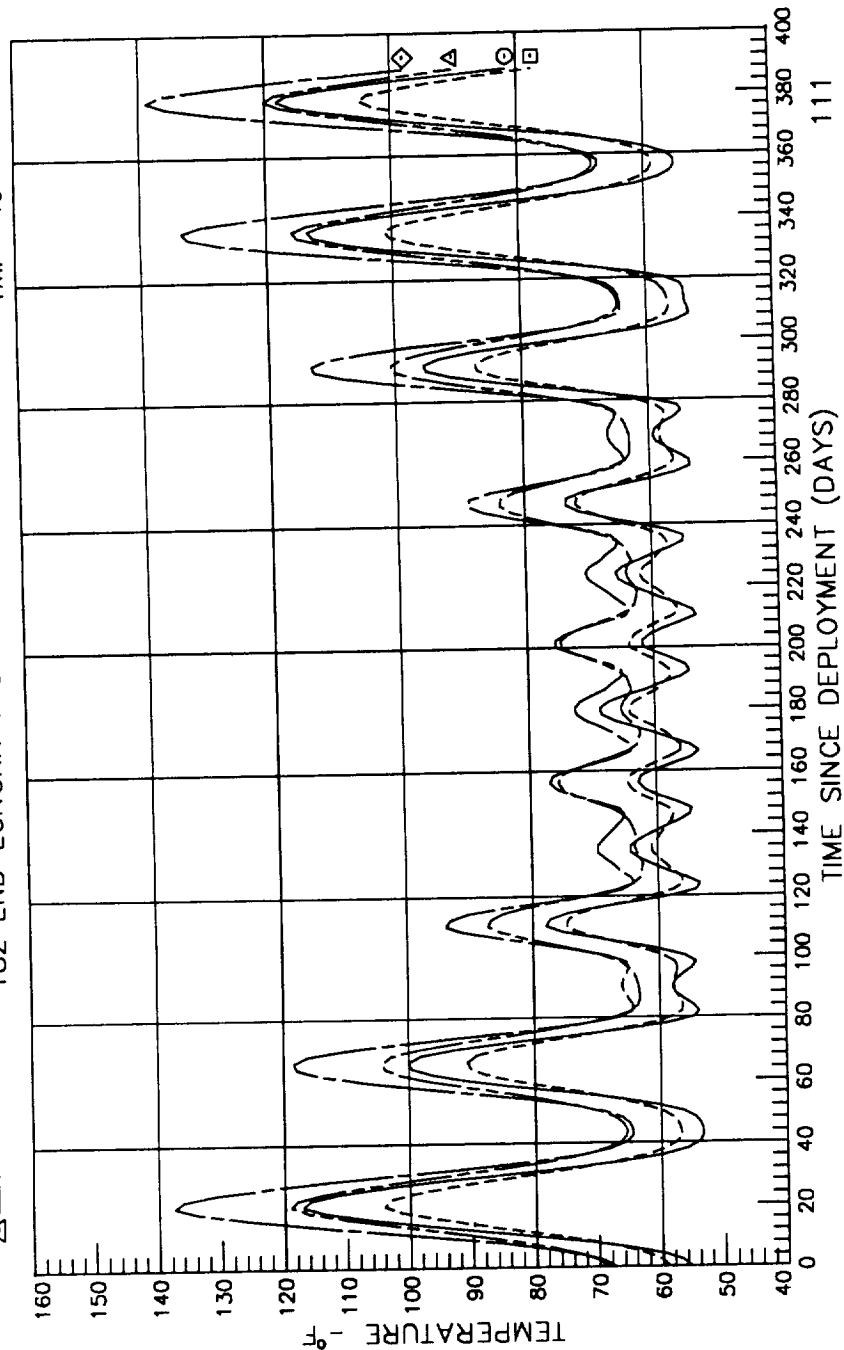
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



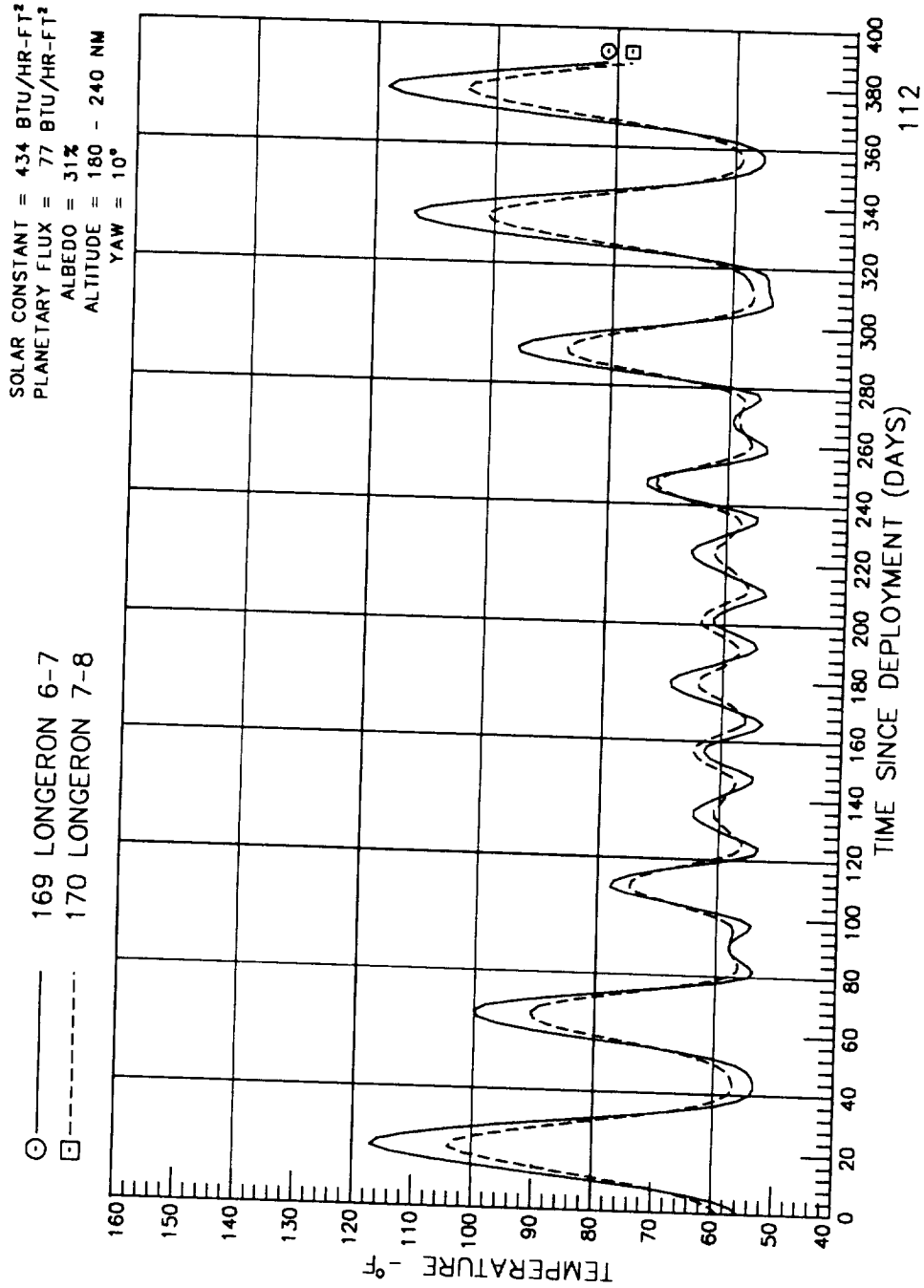
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC A7

169 LONGERON 6-7  
 170 LONGERON 7-8  
 181 END LONGRN 6-7  
 182 END LONGRN 7-8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC B7 & C7



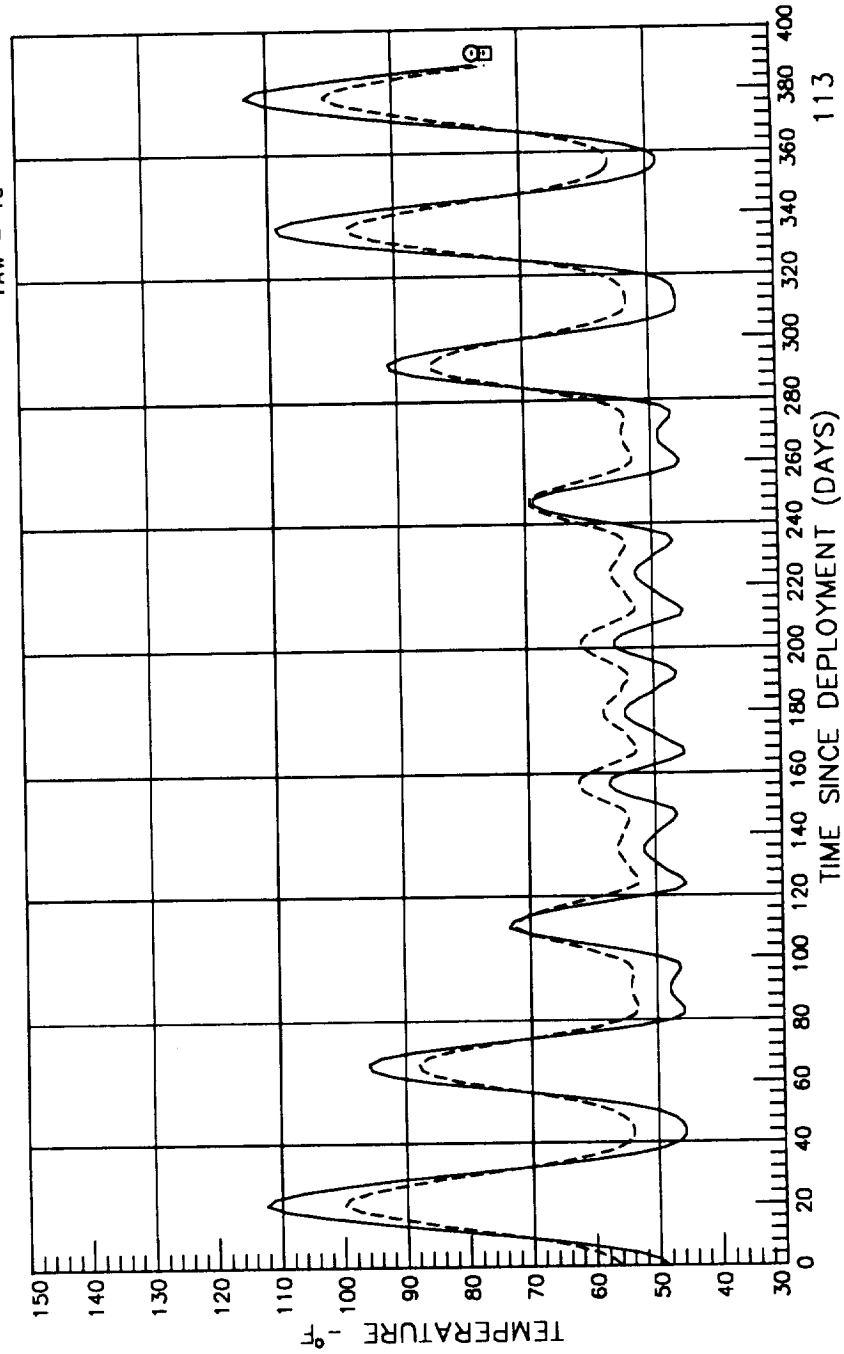


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC D7 & E7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

246 LONGERON 6-7  
 247 LONGERON 7-8

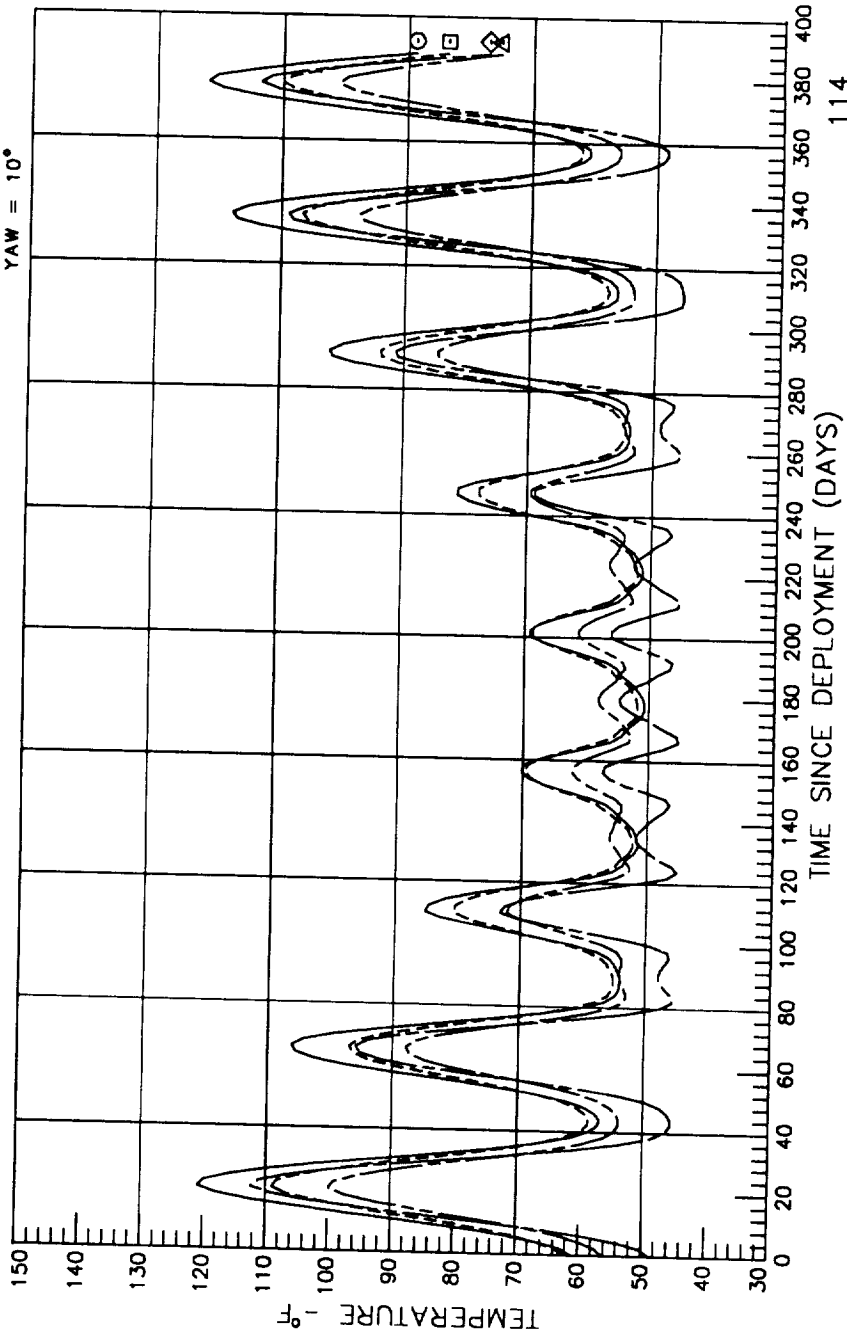
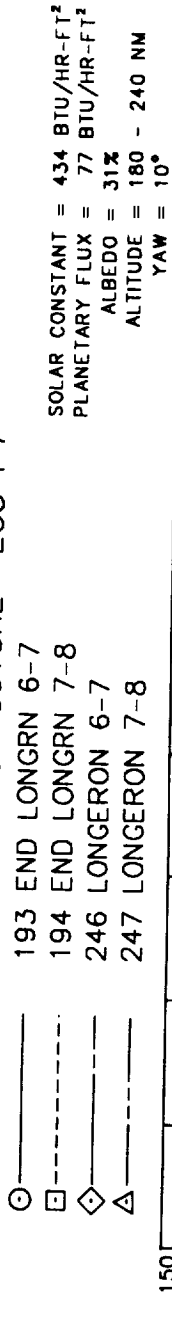
○ ——— 246 LONGERON 6-7  
 □ - - - - 247 LONGERON 7-8



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

STRUCTURE: LOC F7



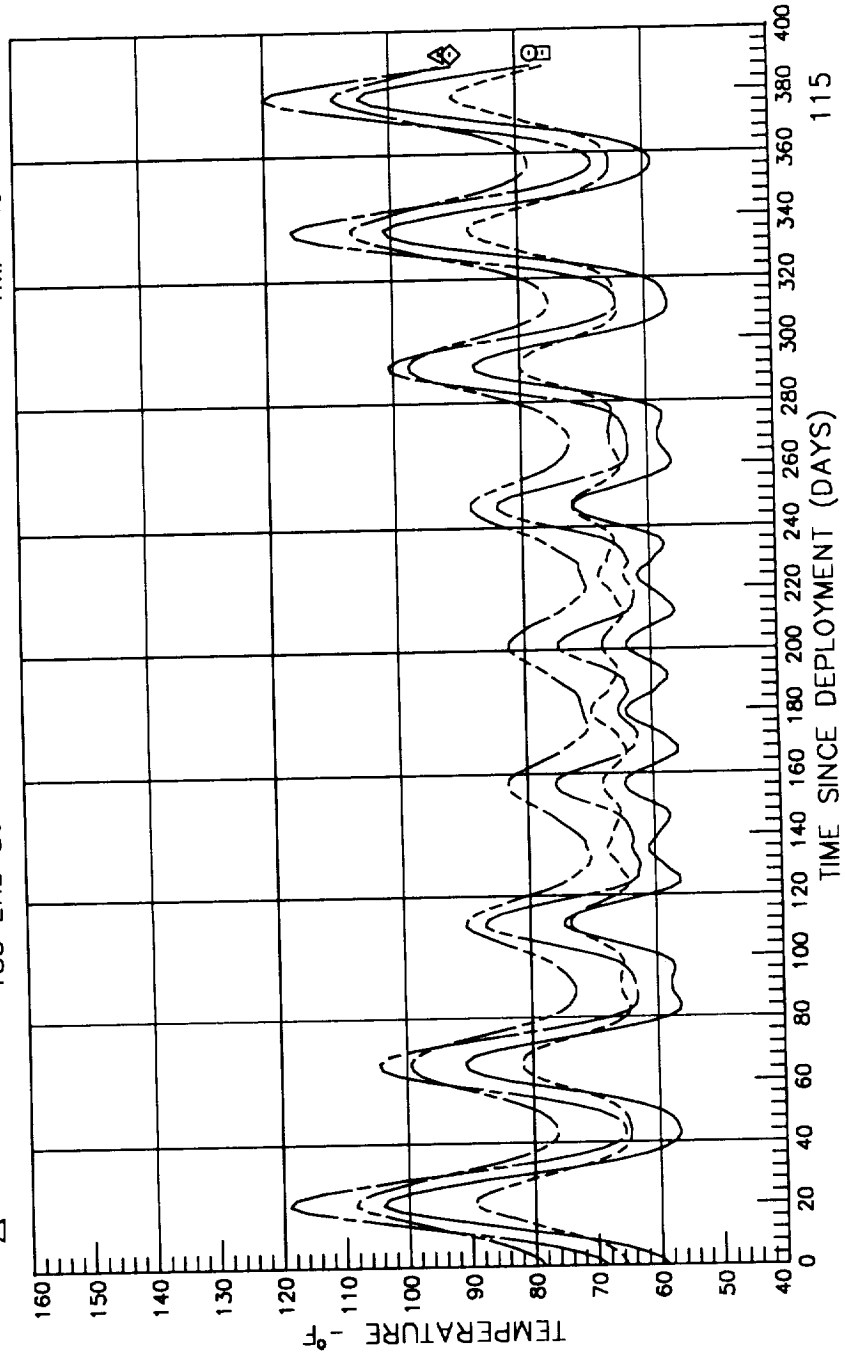
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC A8

○ 170 LONGERON 7-8  
 □ 171 LONGERON 8-9  
 ◇ 182 END LONGRN 7-8  
 △ 183 END LONGRN 8-9

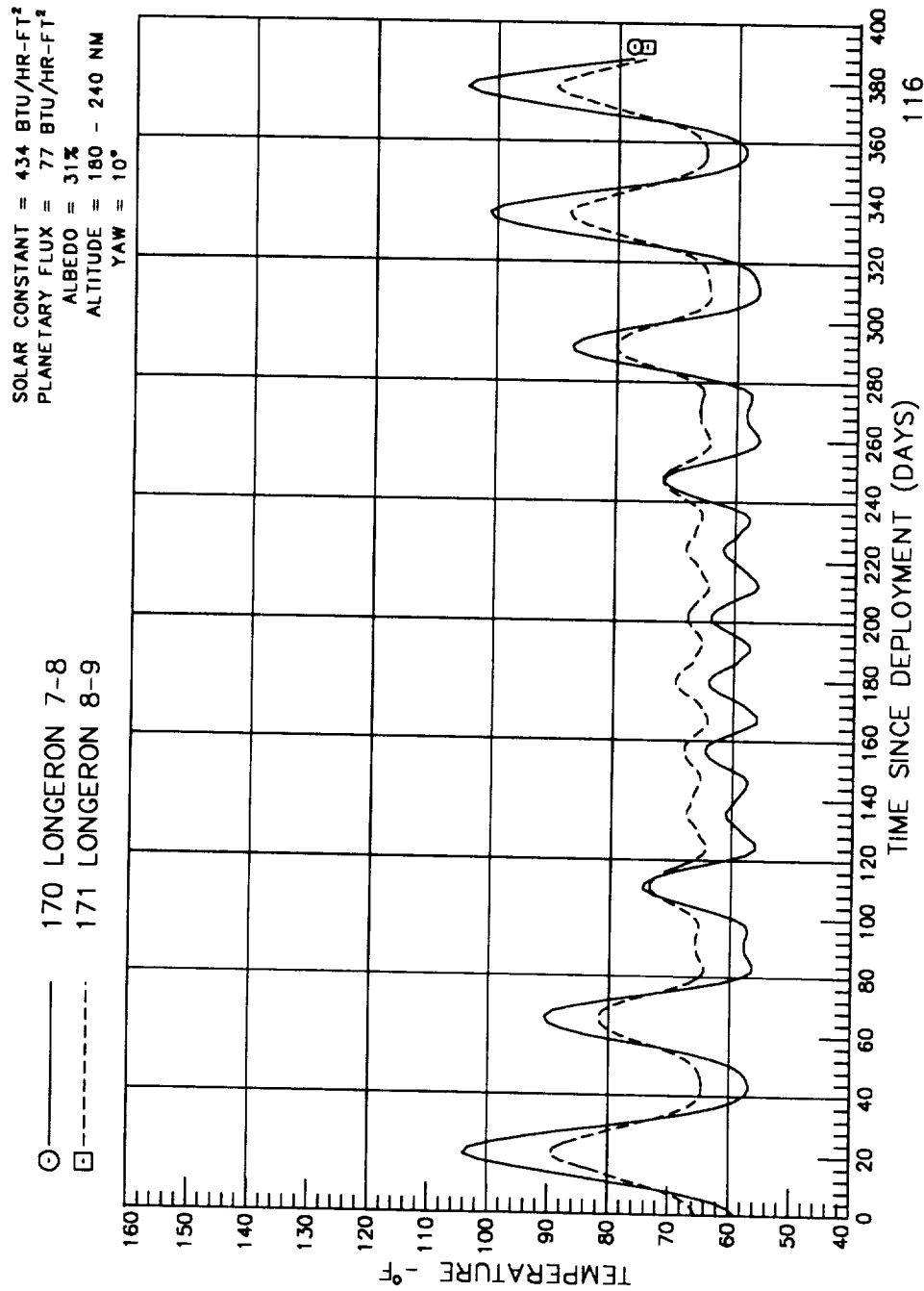
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC B8 & C8

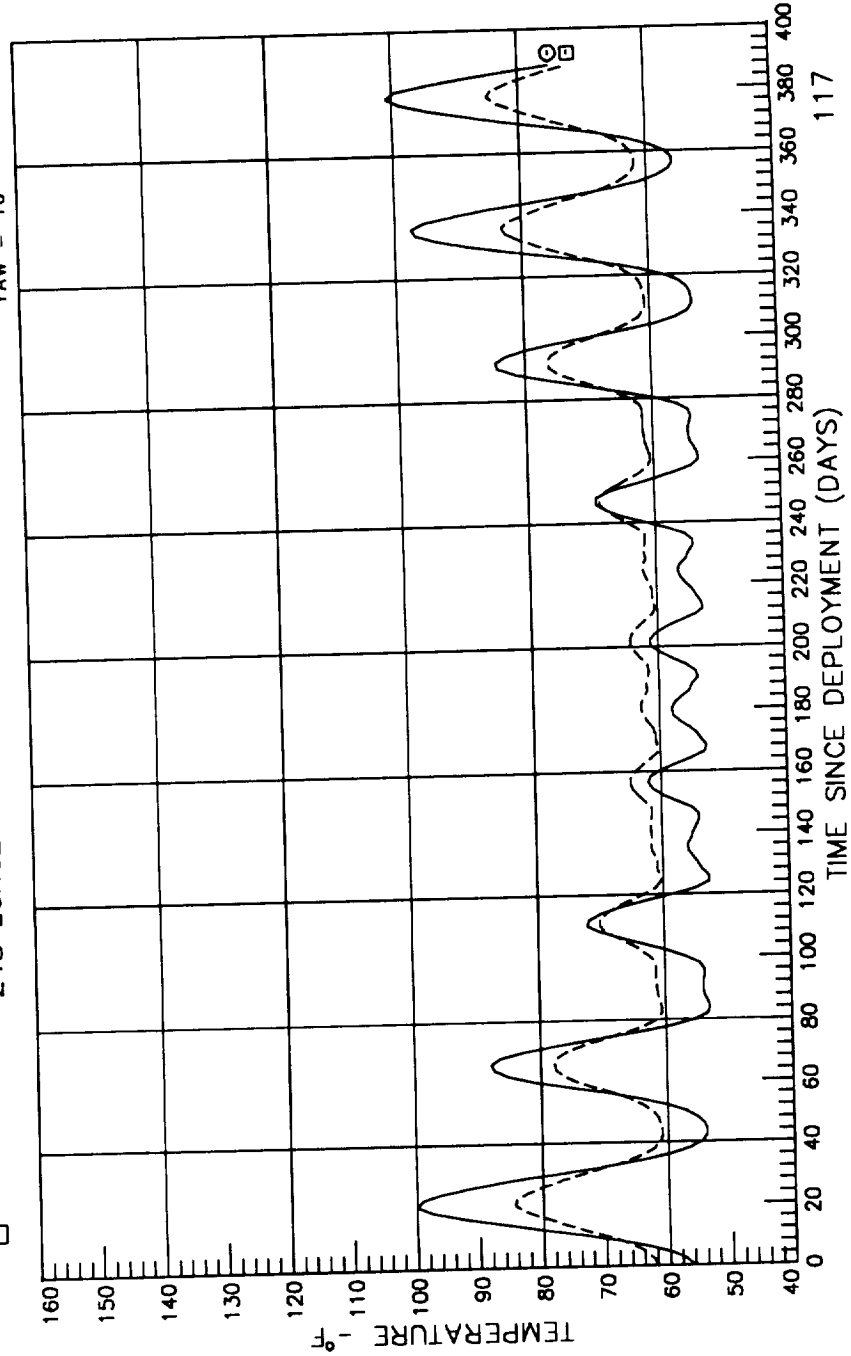


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC D8 & E8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

247 LONGERON 7-8  
 248 LONGERON 8-9

○ ——— 247 LONGERON 7-8  
 □ - - - - 248 LONGERON 8-9



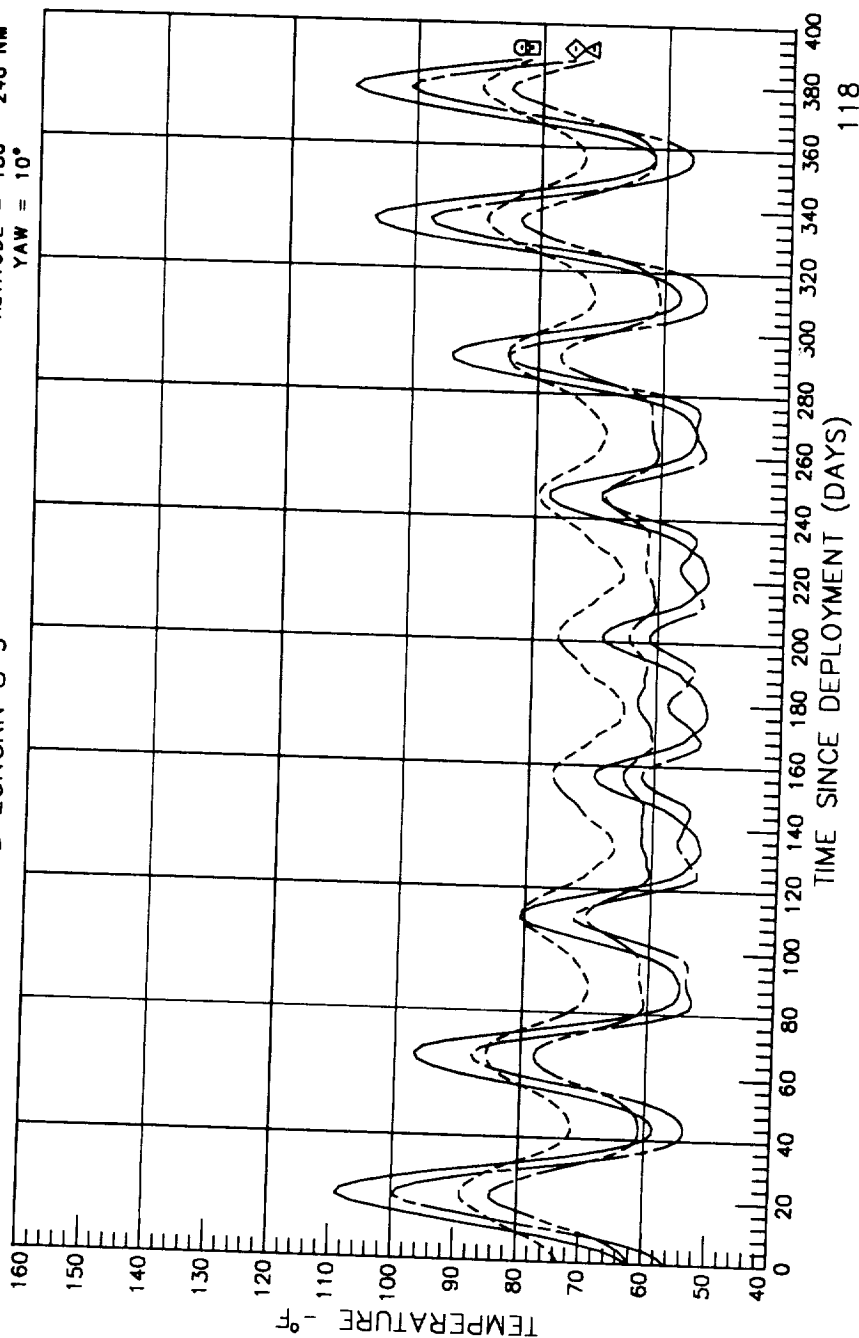
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

STRUCTURE: LOC F8

- 194 LONGERON 7-8
- 195 LONGERON 8-9
- ◇ 247 END LONGRN 7-8
- △ 248 END LONGRN 8-9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



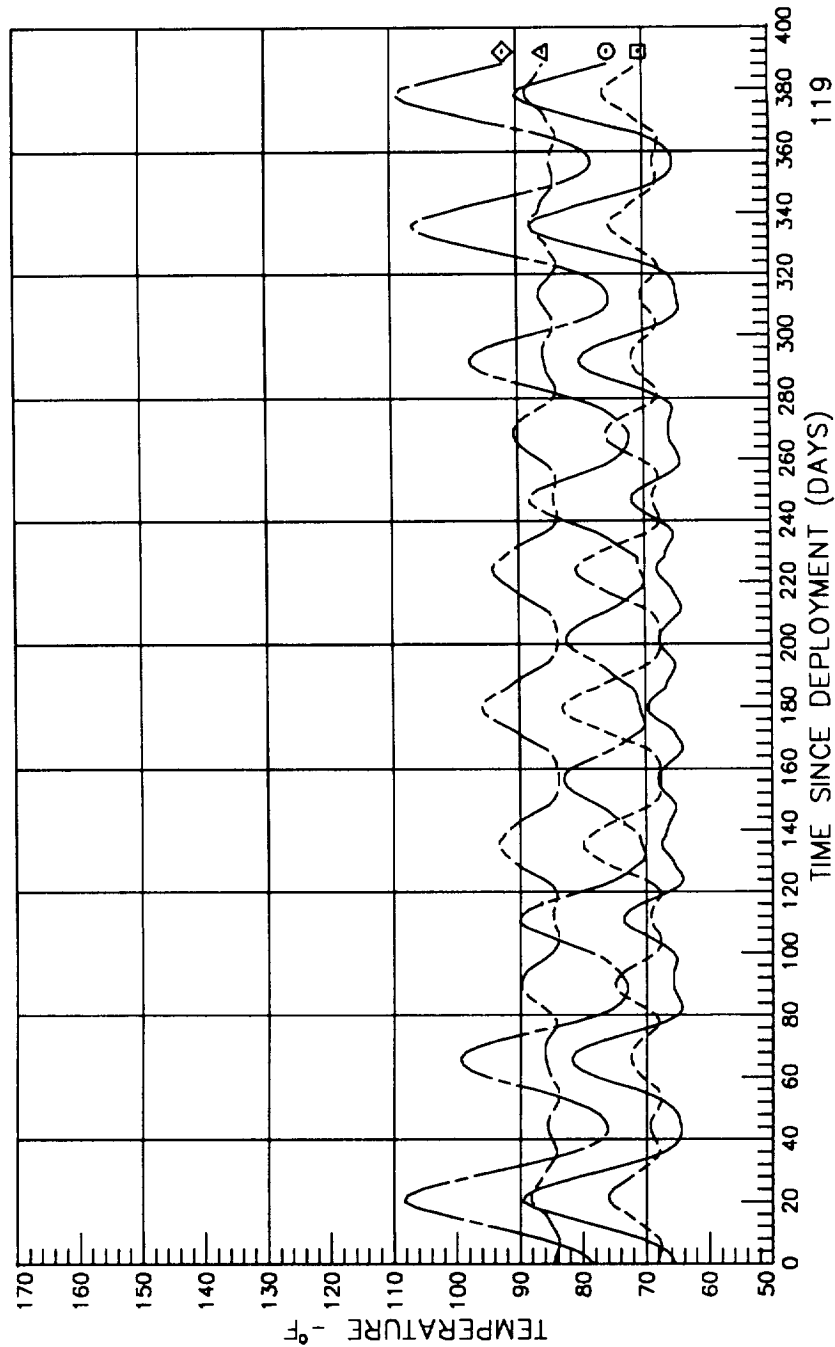
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC A9

○ 171 LONGERON 8-9  
 □ 172 LONGERON 9-10  
 ◇ 183 END LONGRN 8-9  
 △ 184 END LONGRN 9-10

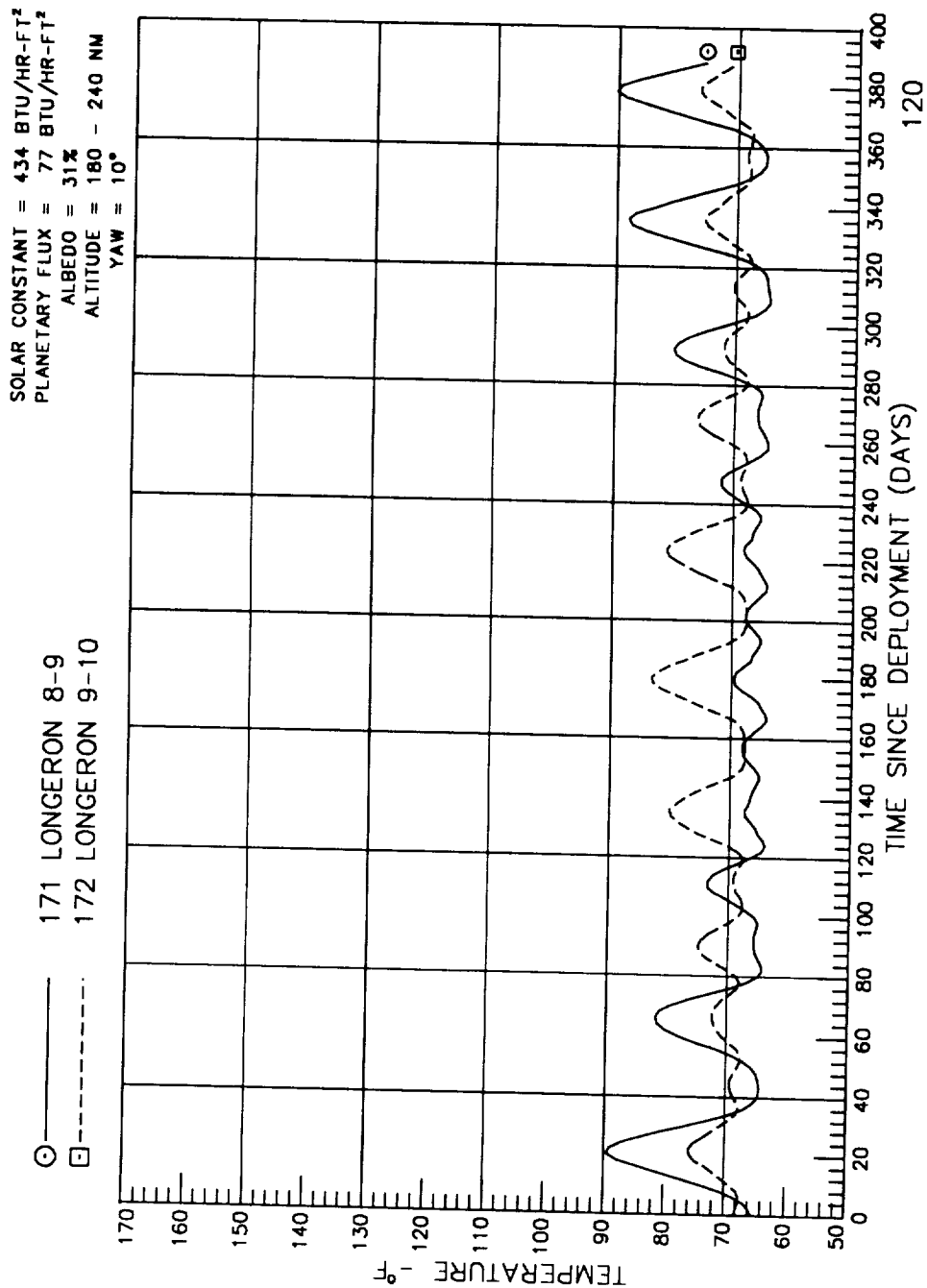
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC B9 & C9





# LONG DURATION EXPOSURE FACILITY

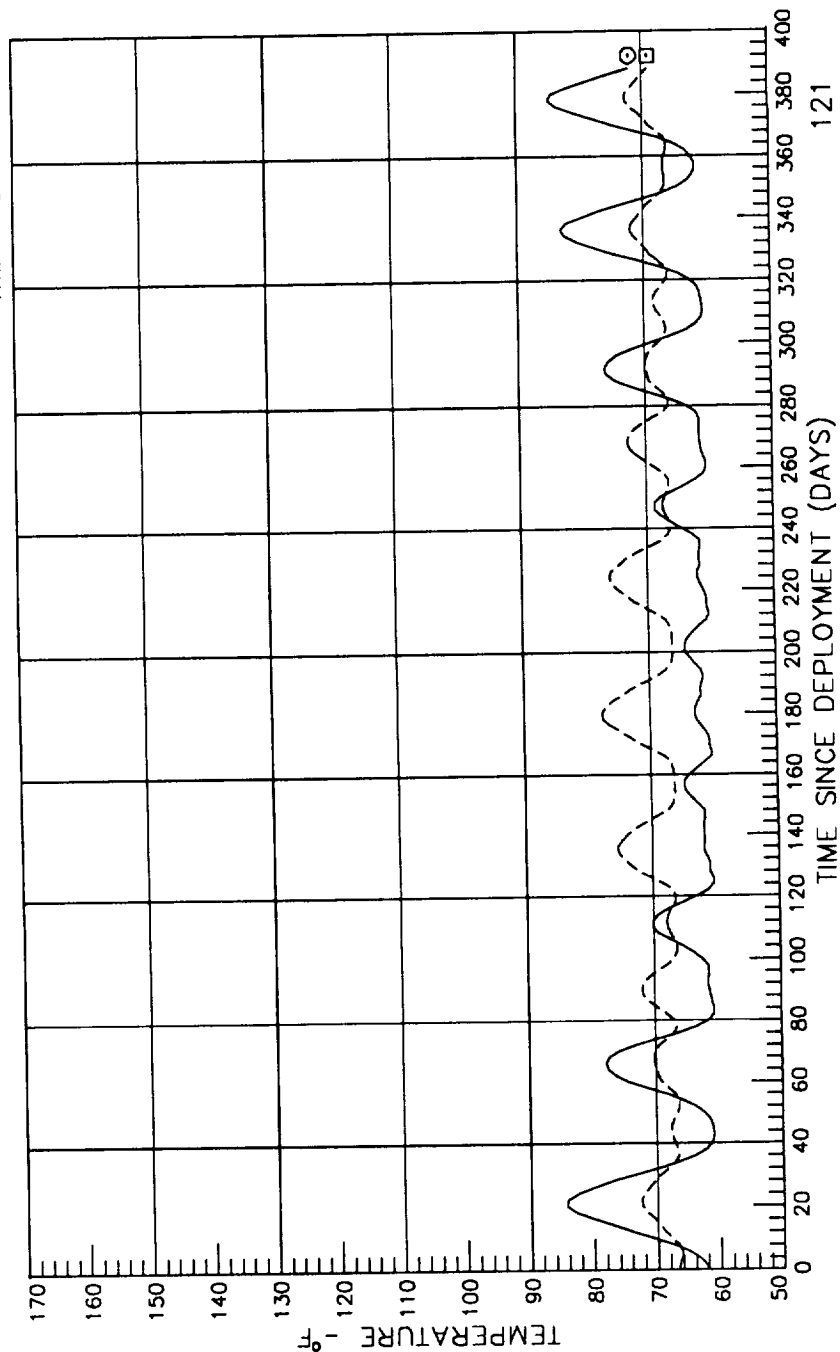
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC D9 & E9

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

248 LONGERON 8-9  
 249 LONGERON 9-10

○ ———  
 □ - - - - -

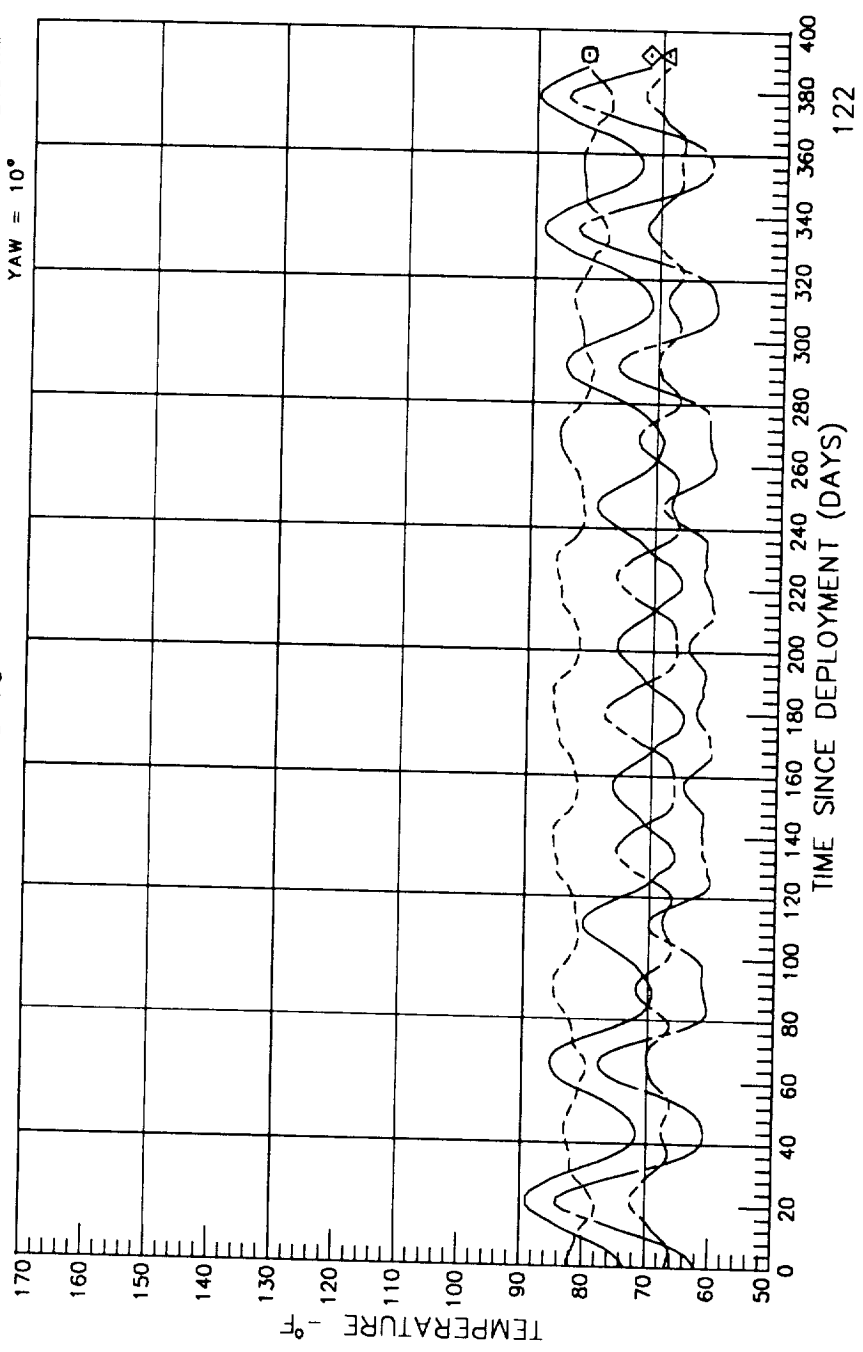


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

STRUCTURE: LOC F9

○ — 195 END LONGRN 8-9  
 □ - - - 196 END LONGRN 9-10  
 ◇ - - - 248 LONGERON 8-9  
 △ - - - 249 LONGERON 9-10

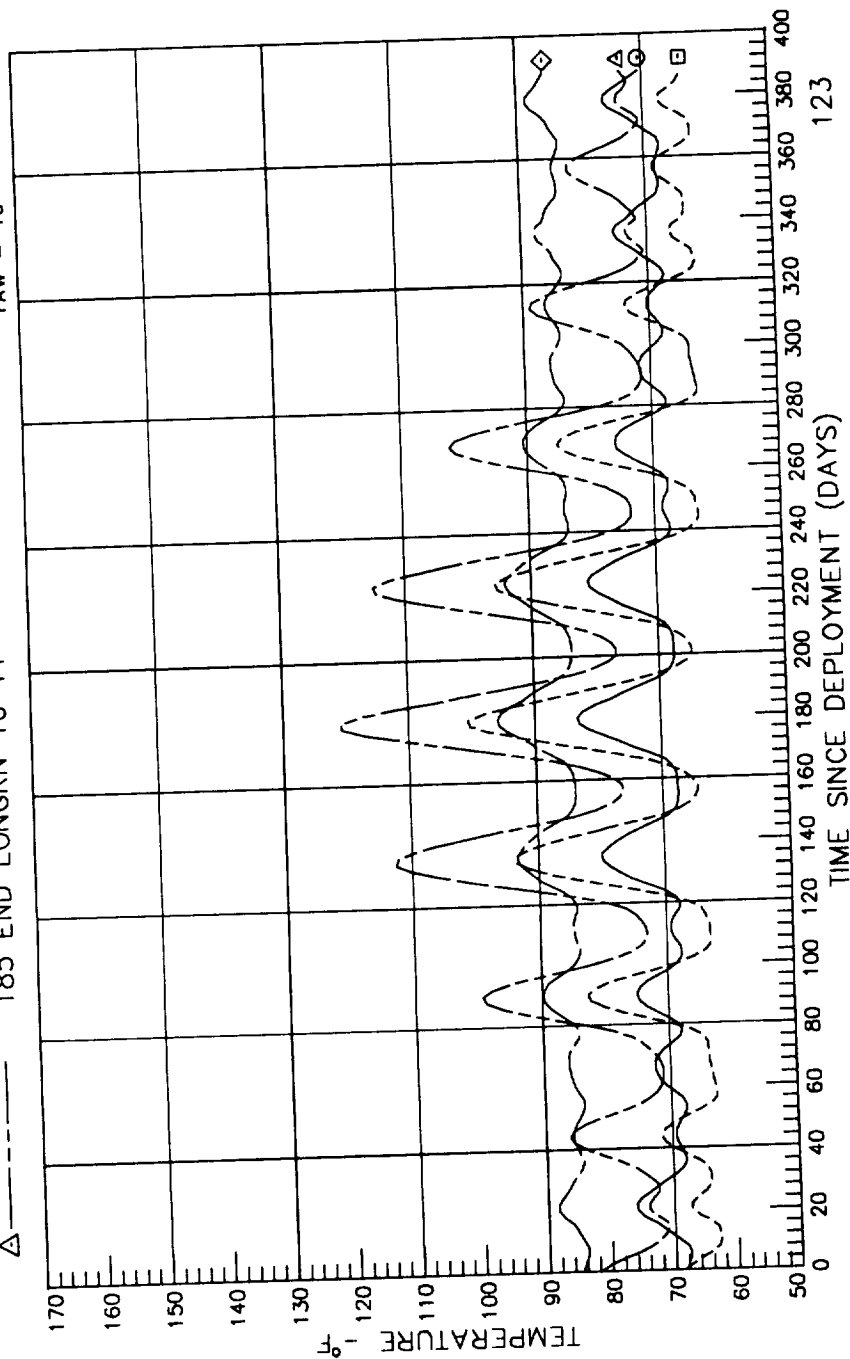
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC A10

○ 172 LONGERON 9-10  
 □ 173 LONGERON 10-11  
 ◇ 184 END LONGRN 9-10  
 △ 185 END LONGRN 10-11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



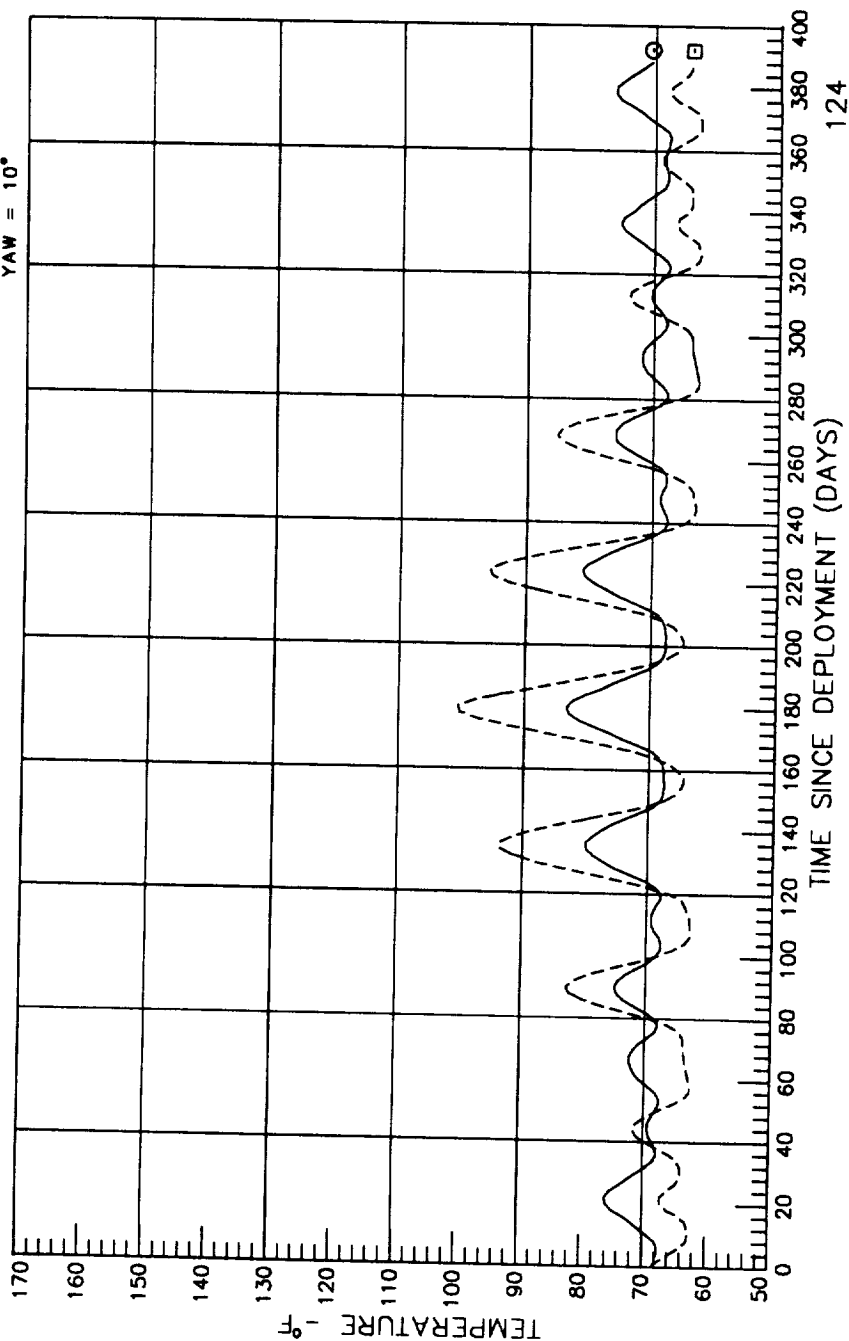
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC B10 & C10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 172 LONGERON 9-10  
 □ 173 LONGERON 10-11

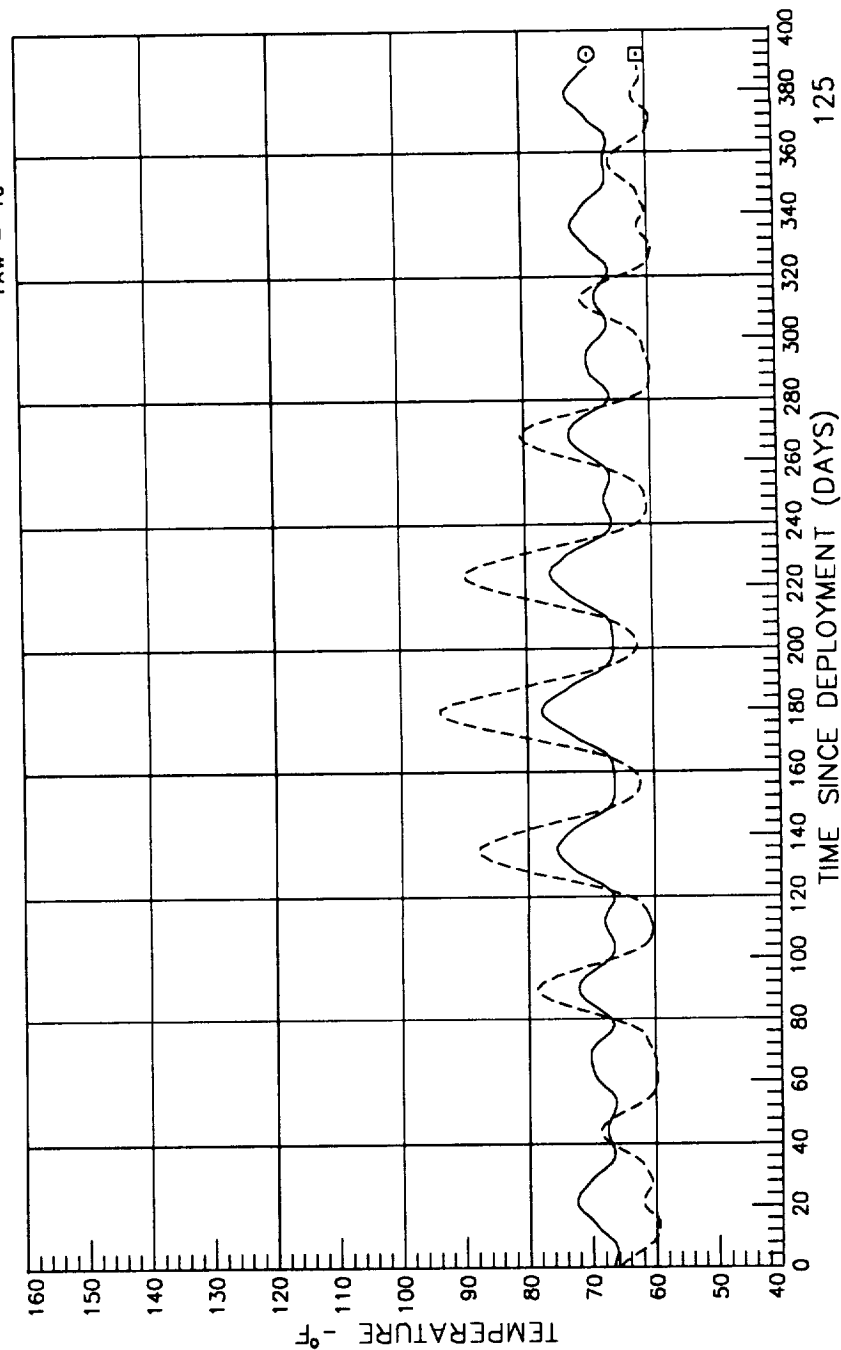


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC D10 & E10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

249 LONGERON 9-10  
 250 LONGERON 10-11

○ ———  
 □ - - - -



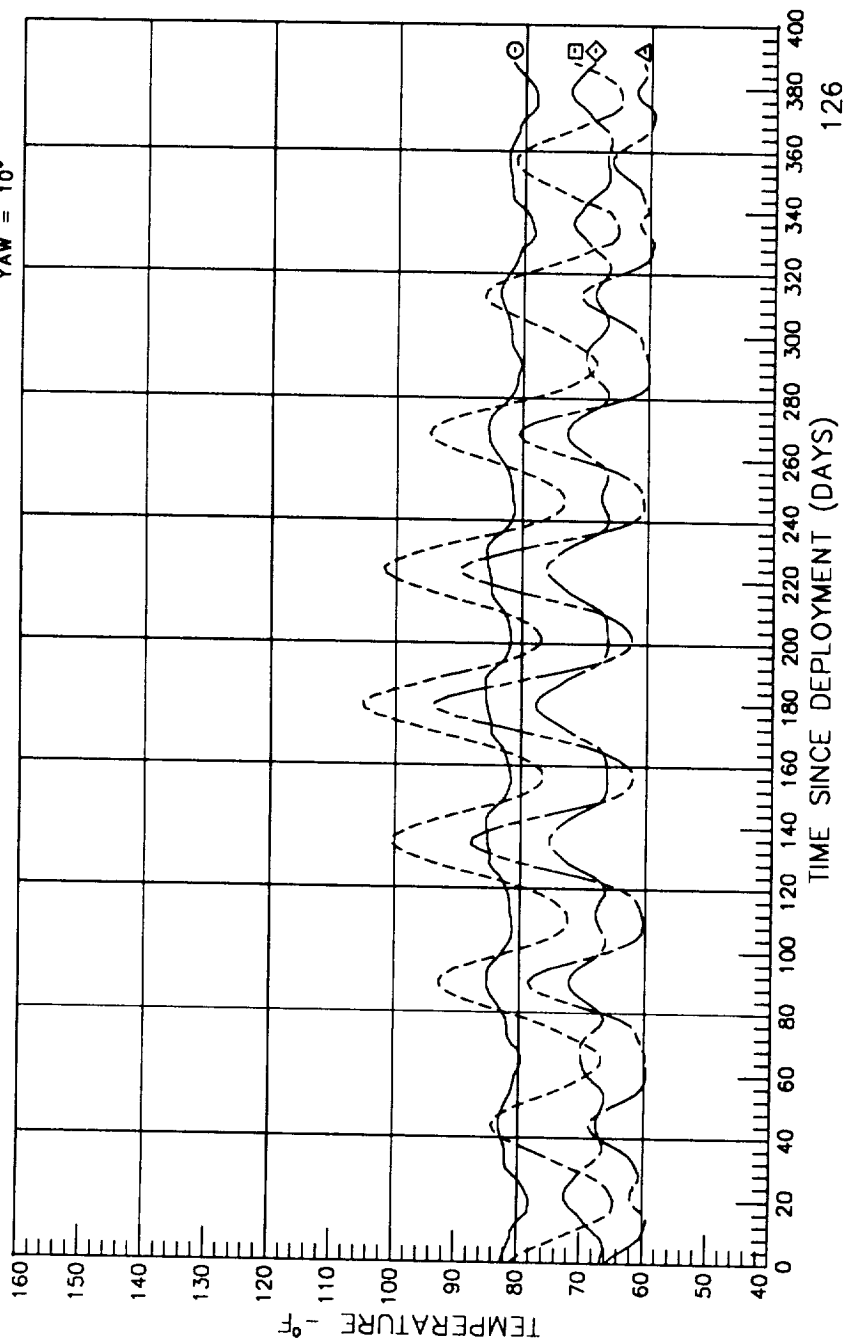
# LONG DURATION EXPOSURE FACILITY

DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

STRUCTURE: LOC F10

- — 196 END LONGRN 9-10
- — 197 END LONGRN 10-11
- ◇ — 249 LONGERON 9-10
- △ — 250 LONGERON 10-11

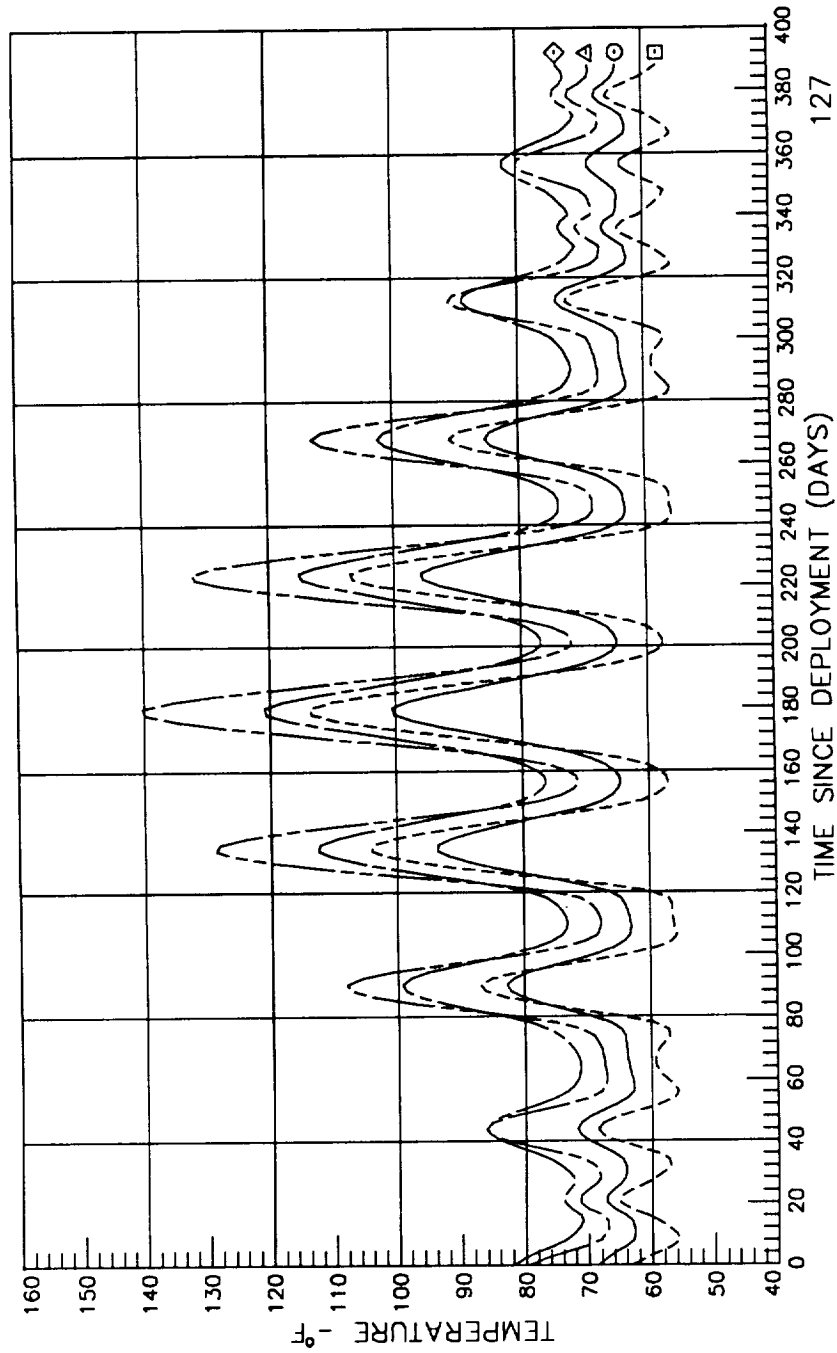
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC A11

○ 173 LONGERON 10-11  
 □ 174 LONGERON 11-12  
 ◇ 185 END LONGRN 10-11  
 △ 186 END LONGRN 11-12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



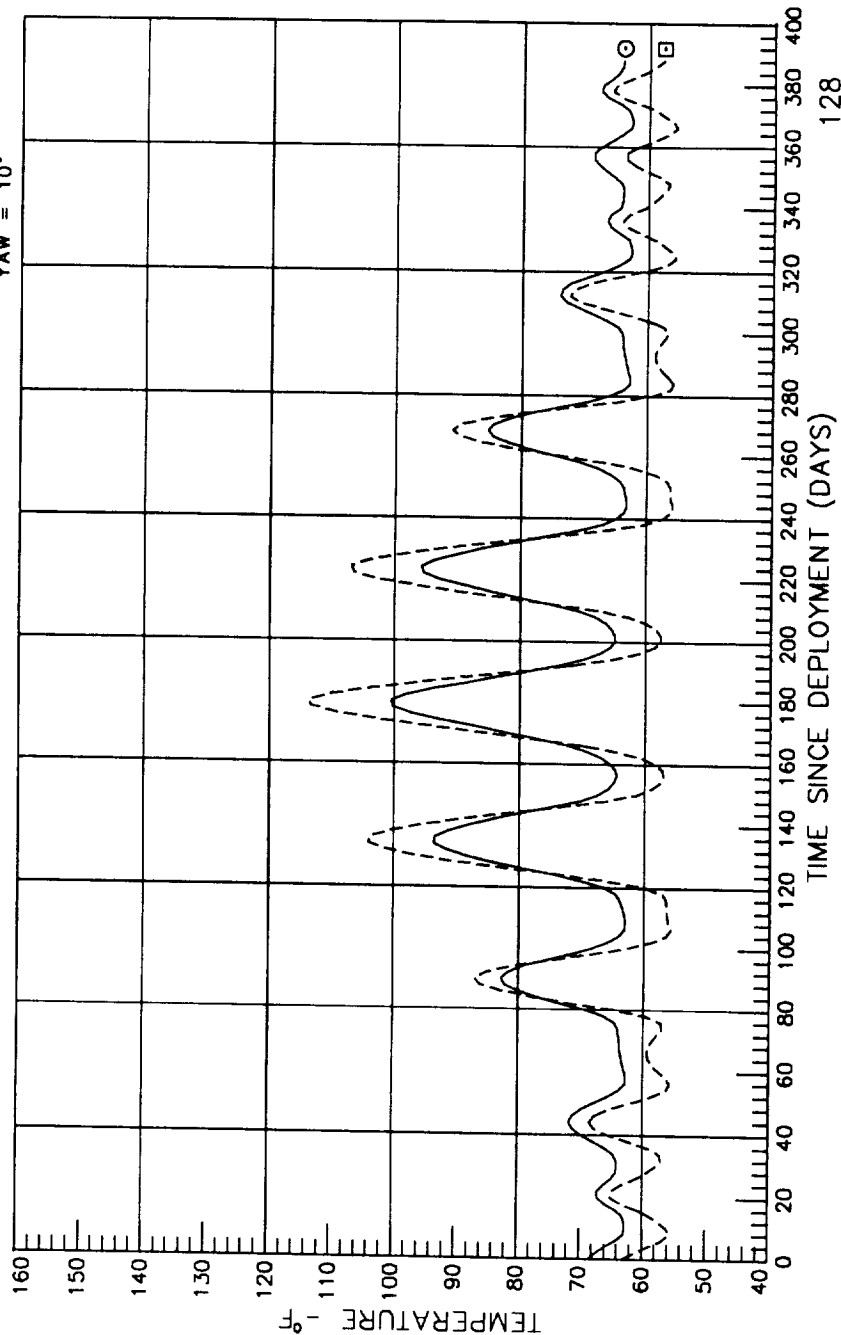
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC B11 & C11

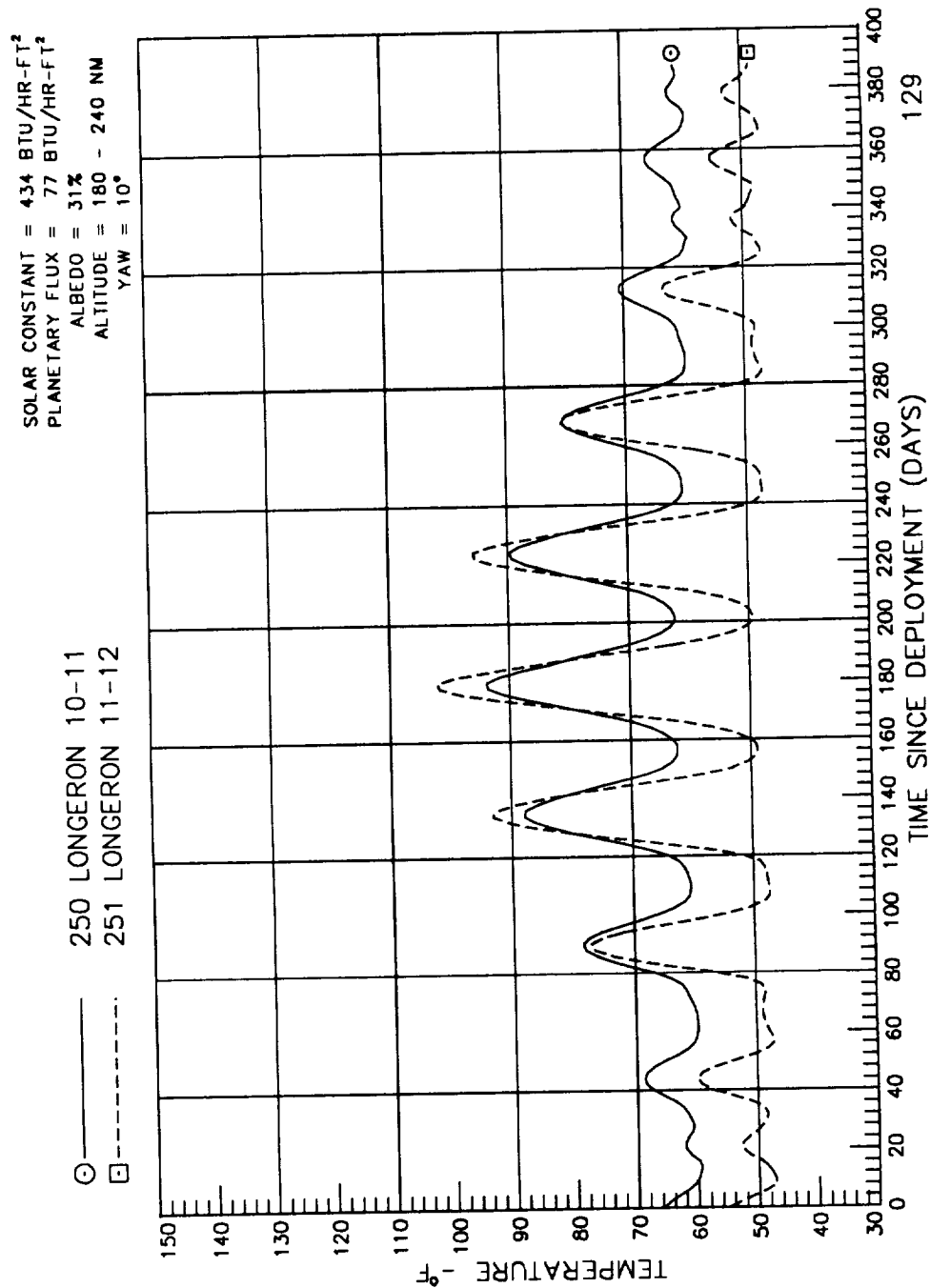
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 173 LONGERON 10-11  
 □ - - - 174 LONGERON 11-12





# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC D11 & E11

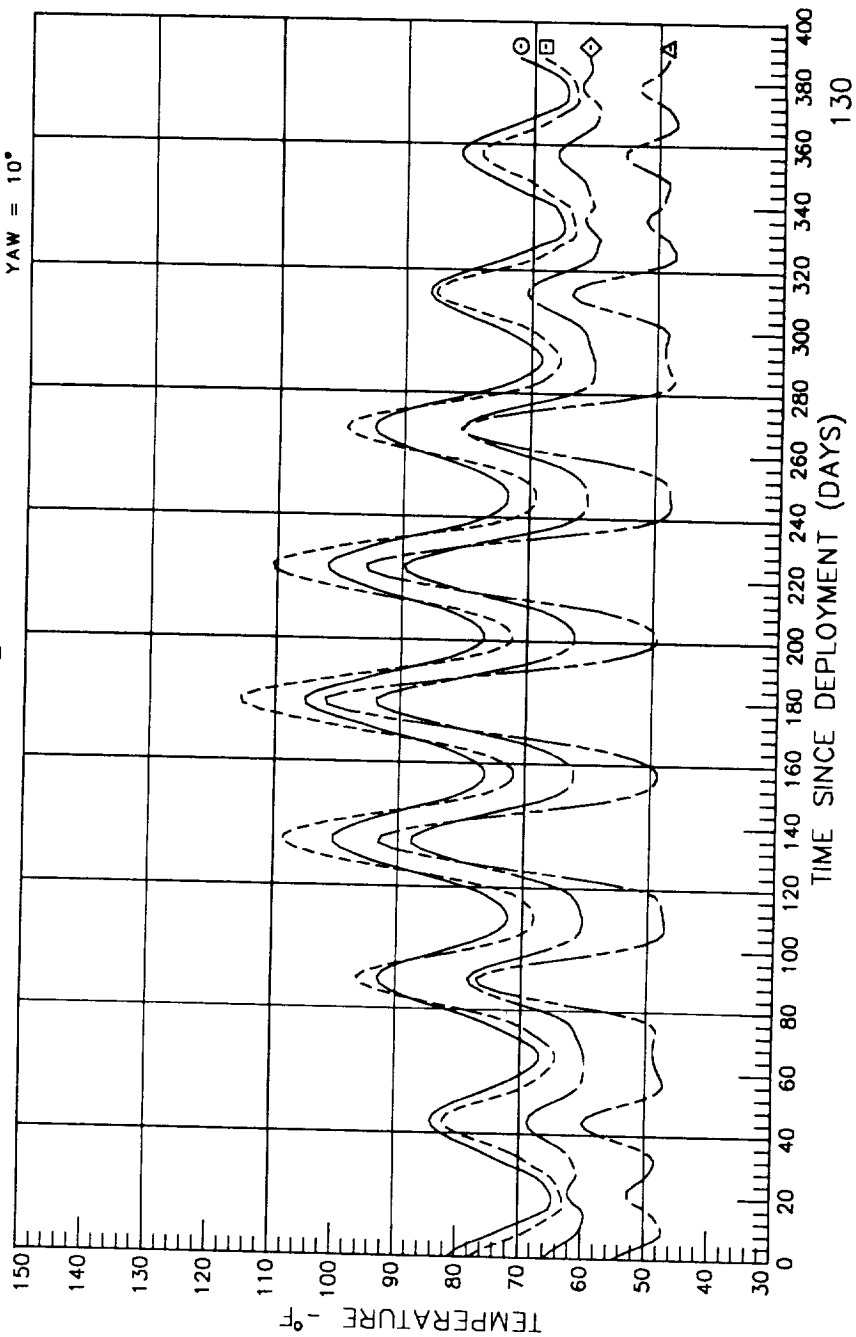


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

STRUCTURE: LOC F11

- — 197 END LONGRN 10-11
- - - - 198 END LONGRN 11-12
- ◇ - - - 250 LONGERON 10-11
- △ - - - 251 LONGERON 11-12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
ALBEDO = 31%  
ALTITUDE = 180 - 240 NM  
YAW = 10°



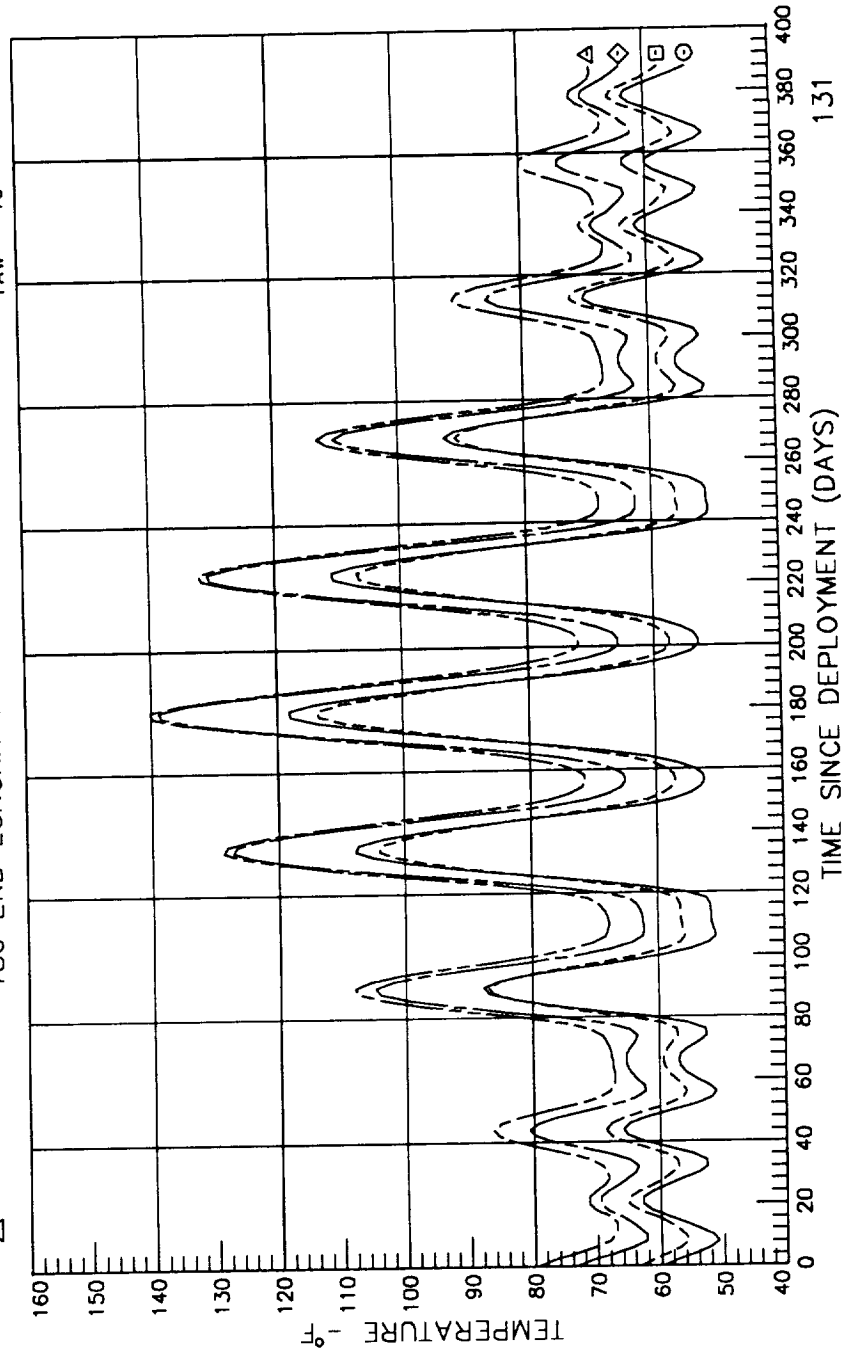
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

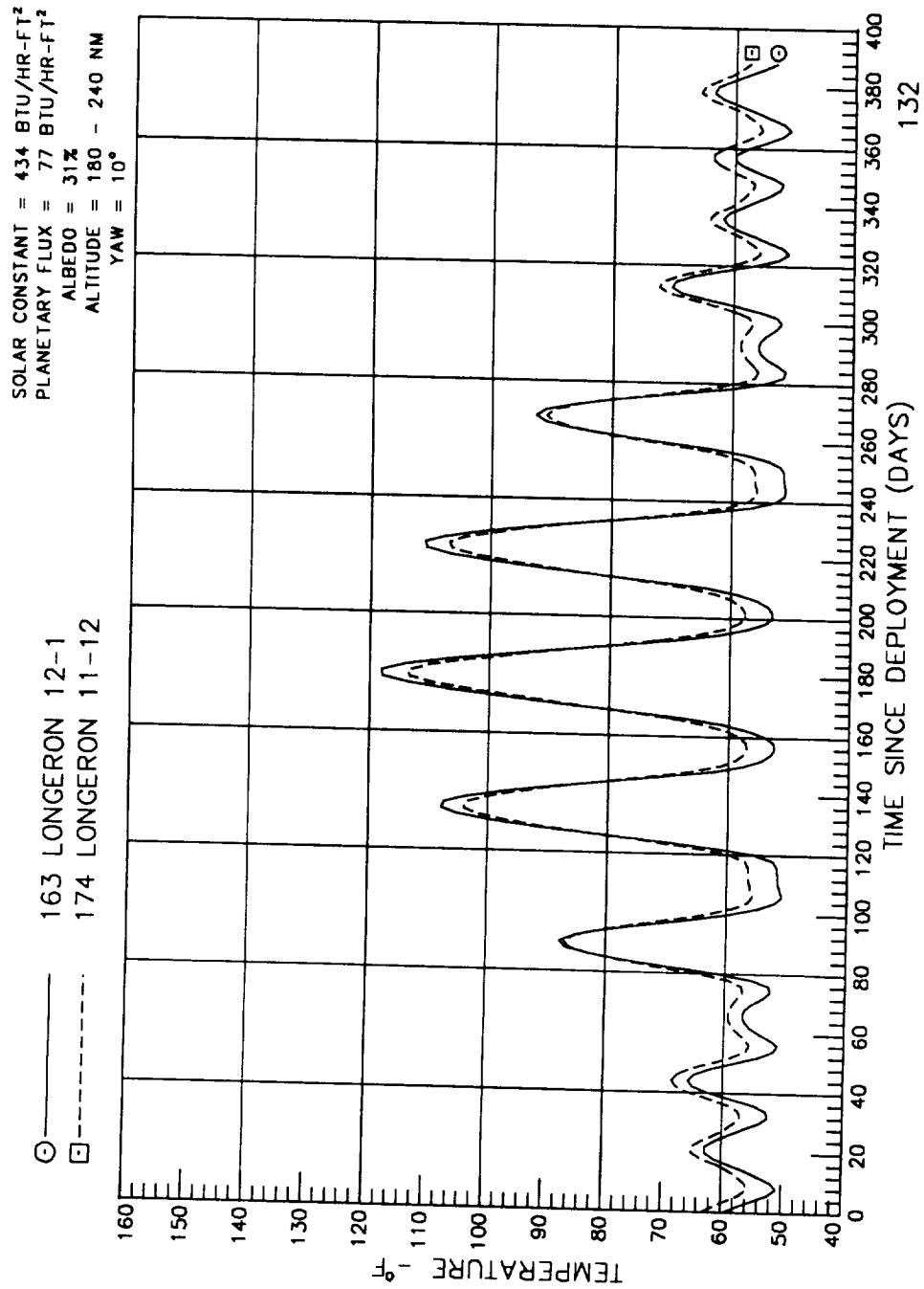
### STRUCTURE: LOC A12

○ LONGERON 12-1  
 □ LONGERON 11-12  
 ◇ END LONGRN 12-1  
 △ END LONGRN 11-12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC B12 & C12

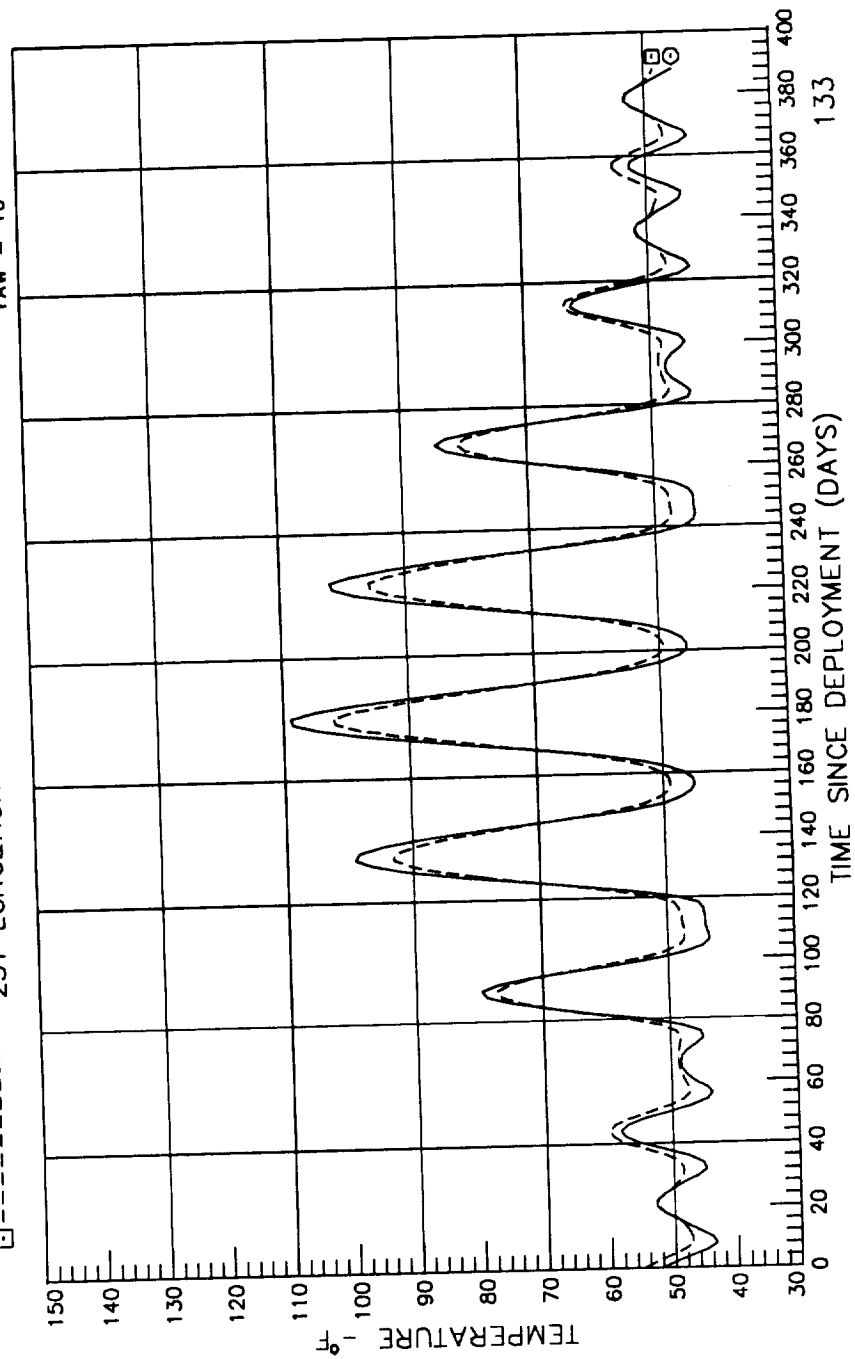


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC D12 & E12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

240 LONGERON 12-1  
 251 LONGERON 11-12

○ ——— 240 LONGERON 12-1  
 □ - - - - 251 LONGERON 11-12



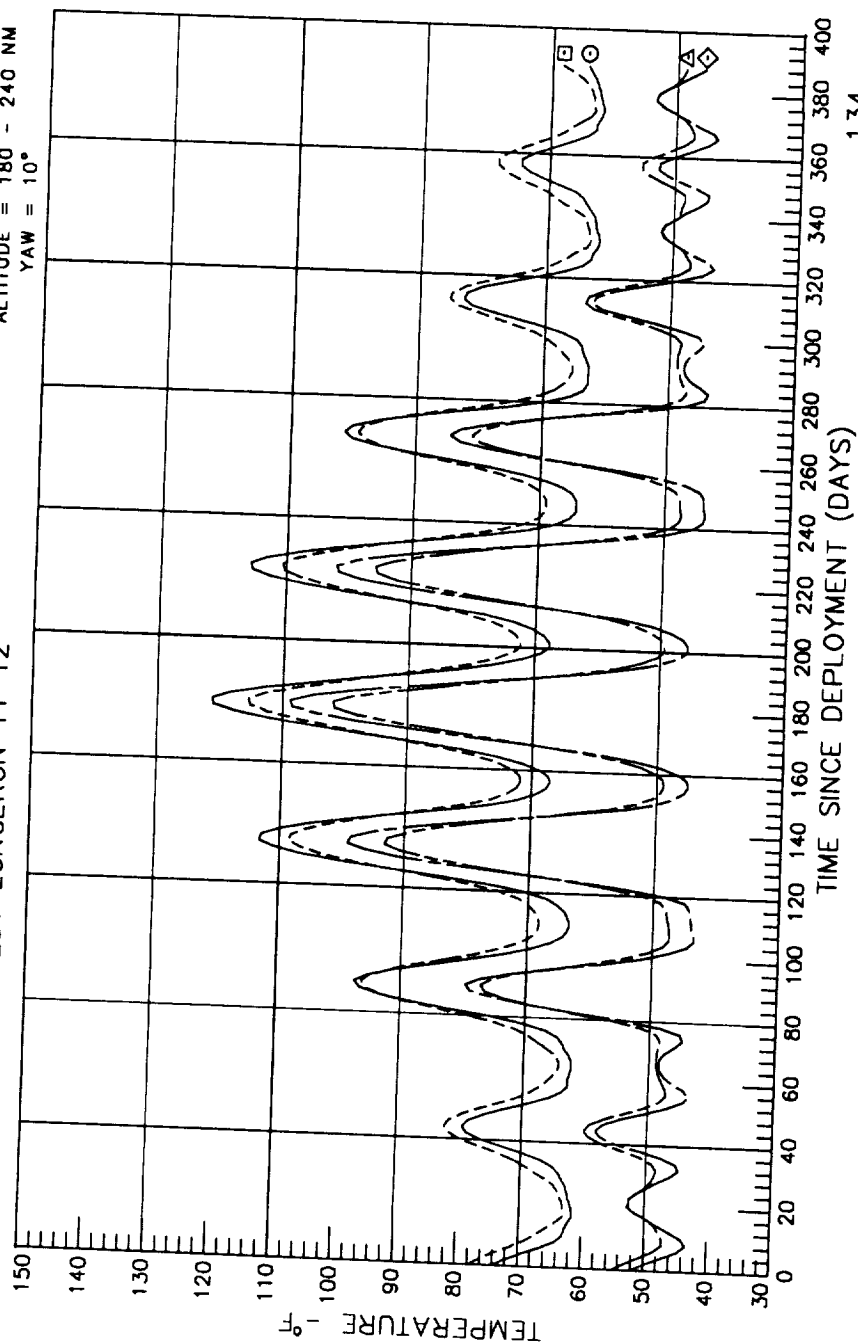
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC F12

- — 187 END LONGRN 12-1
- — 198 END LONGRN 11-12
- ◇ — 240 LONGERON 12-1
- △ — 251 LONGERON 11-12

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°



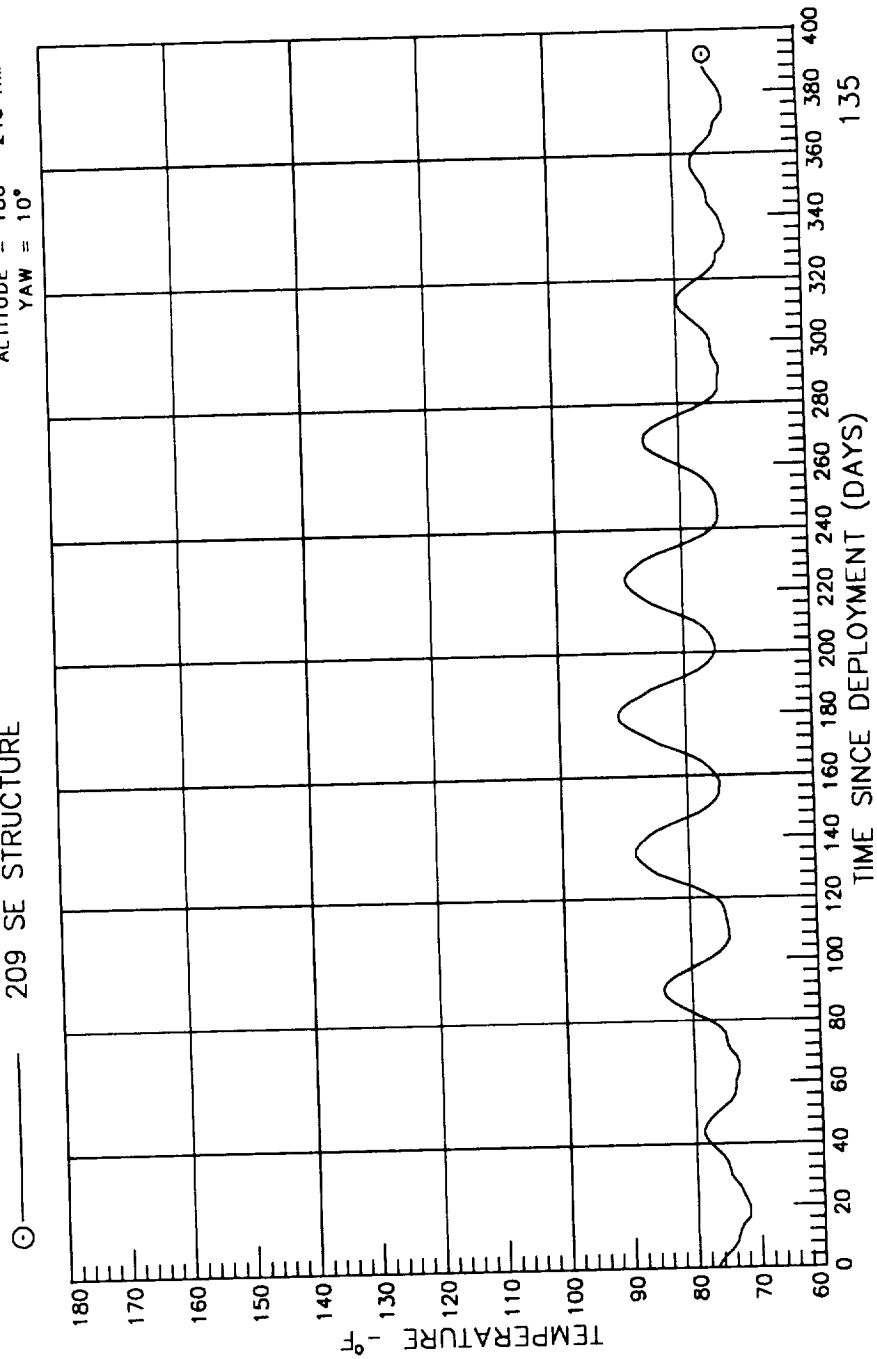
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

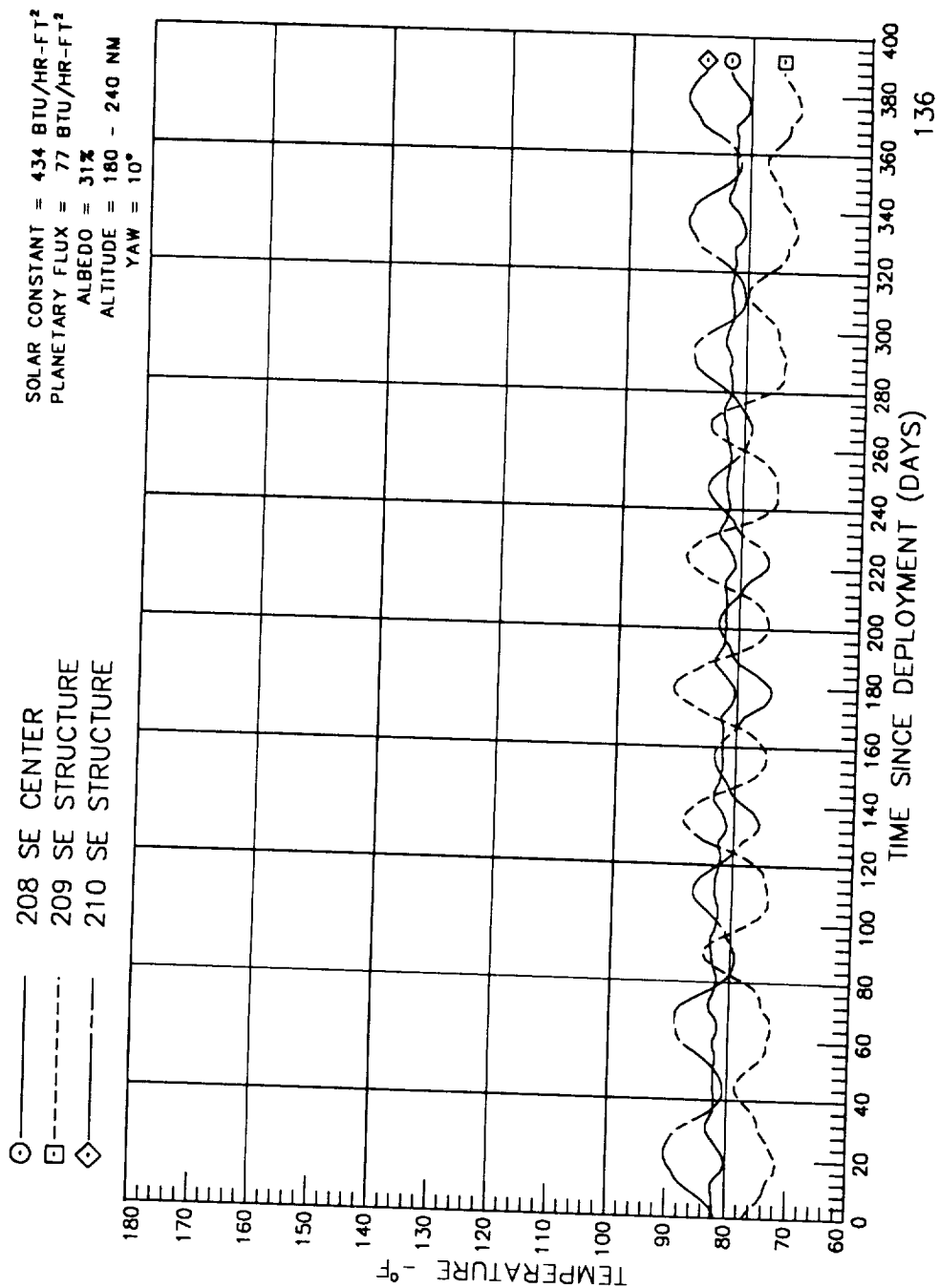
### STRUCTURE: LOC HI

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

209 SE STRUCTURE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC H3





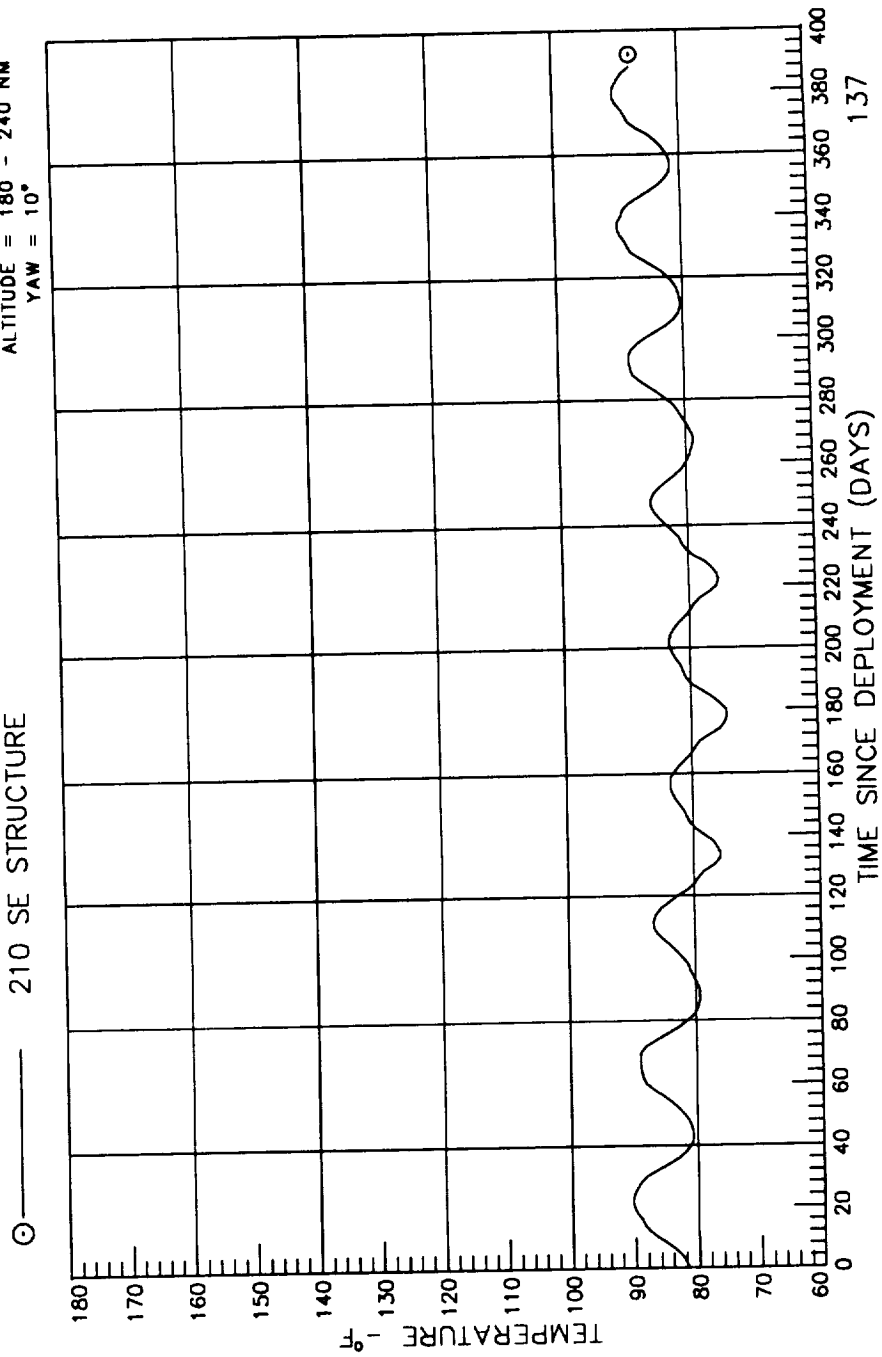
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC H5

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

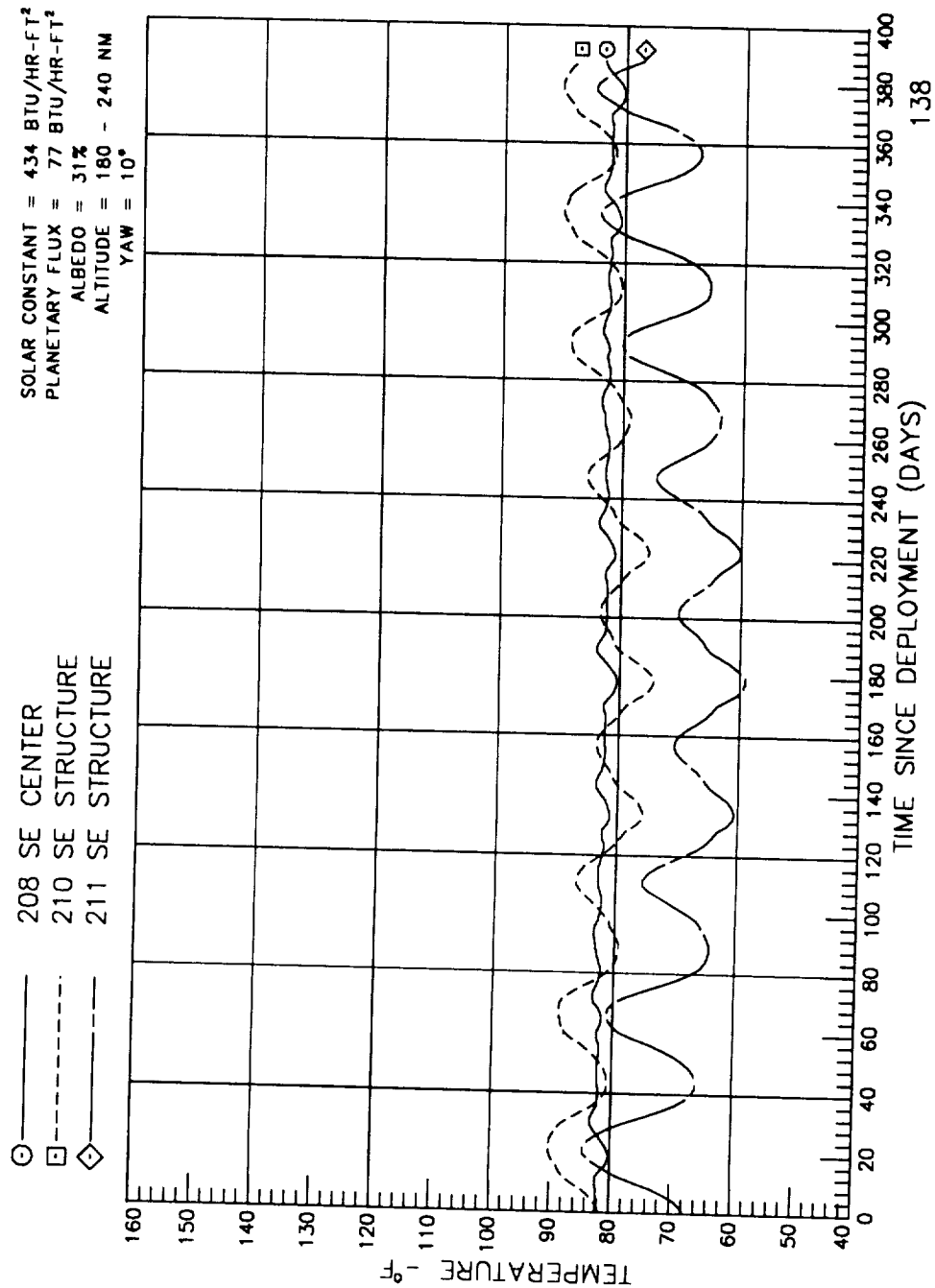
☉ — 210 SE STRUCTURE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

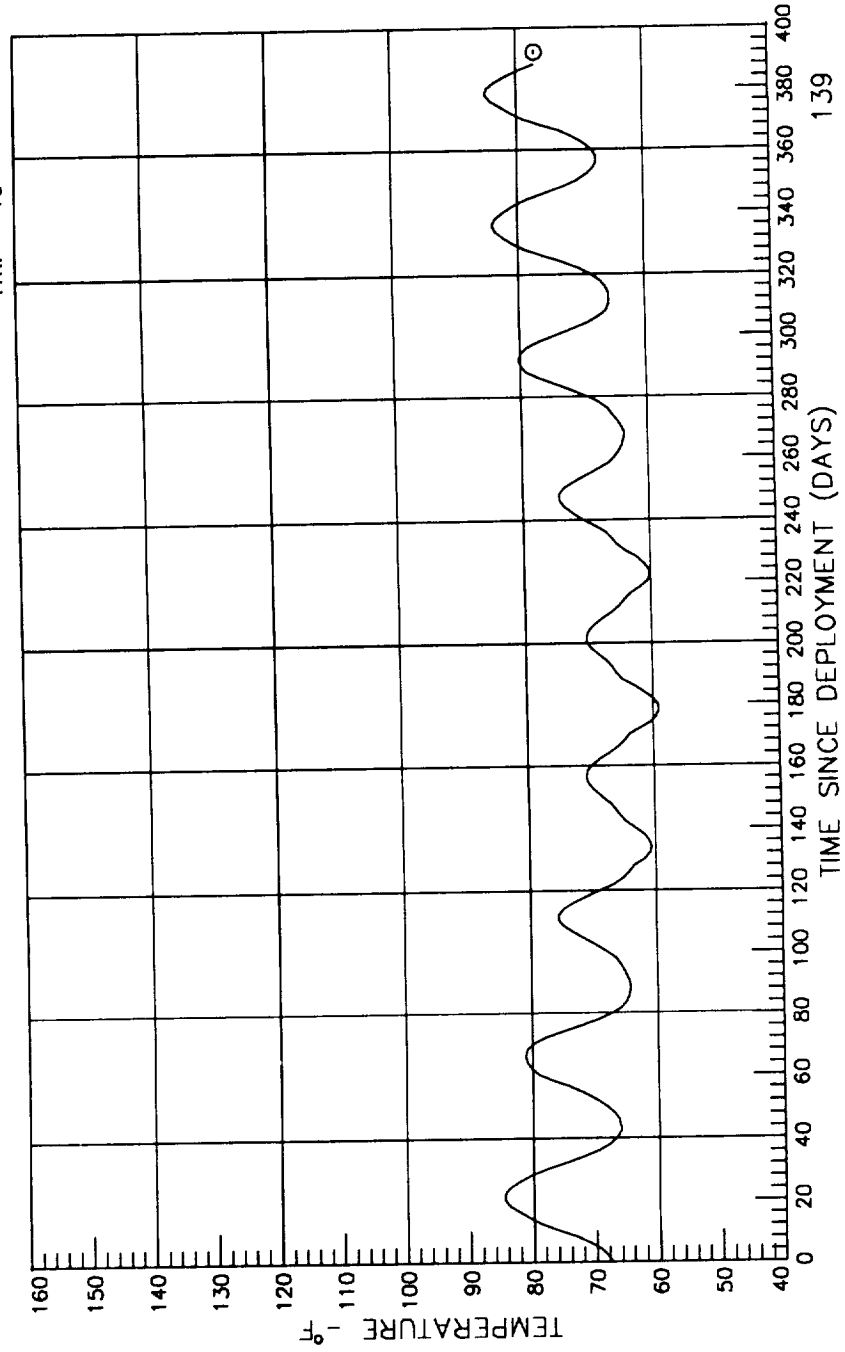
### STRUCTURE: LOC H6



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 STRUCTURE: LOC H7

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

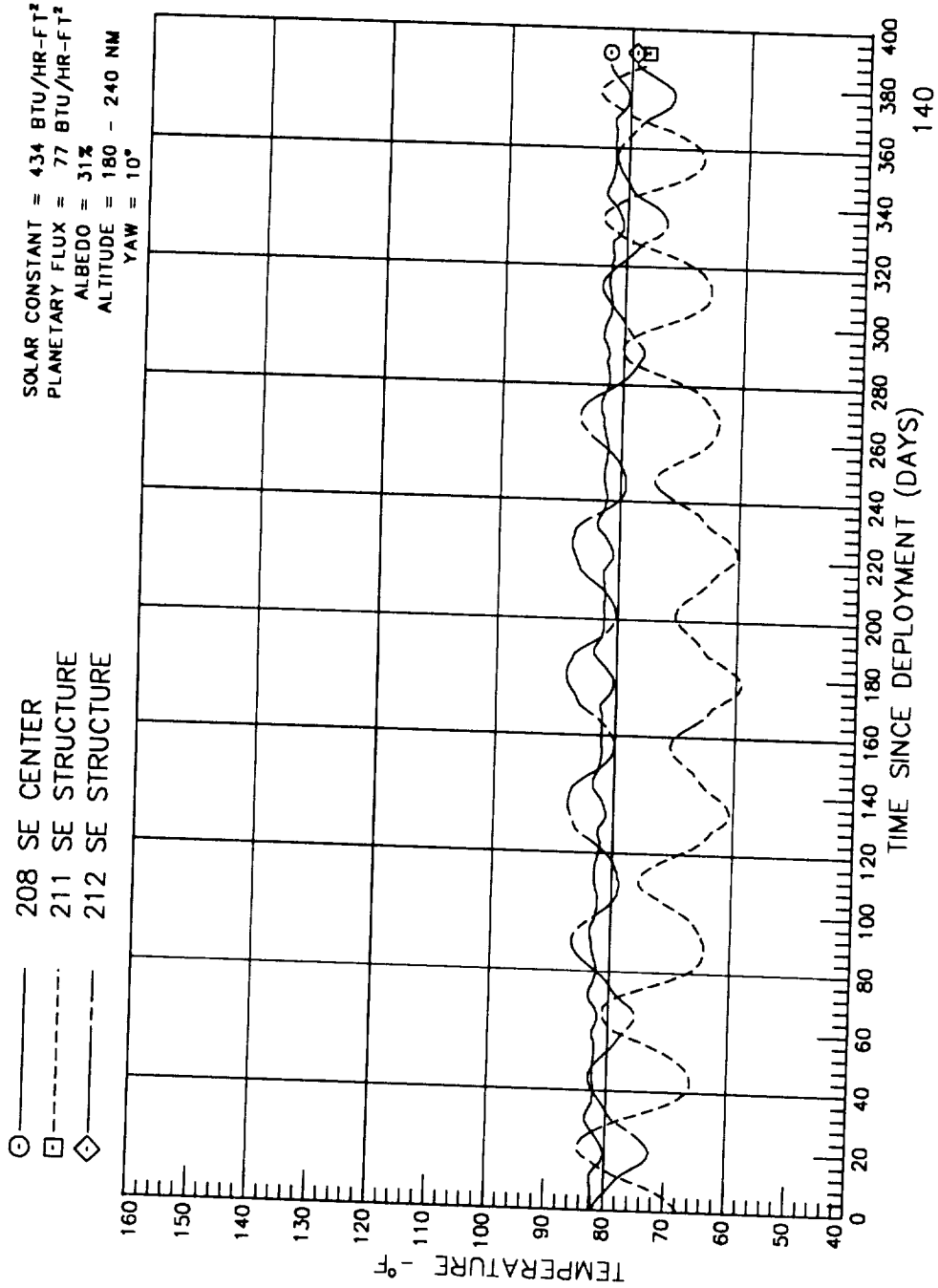
⊙ ——— 211 SE STRUCTURE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC H9



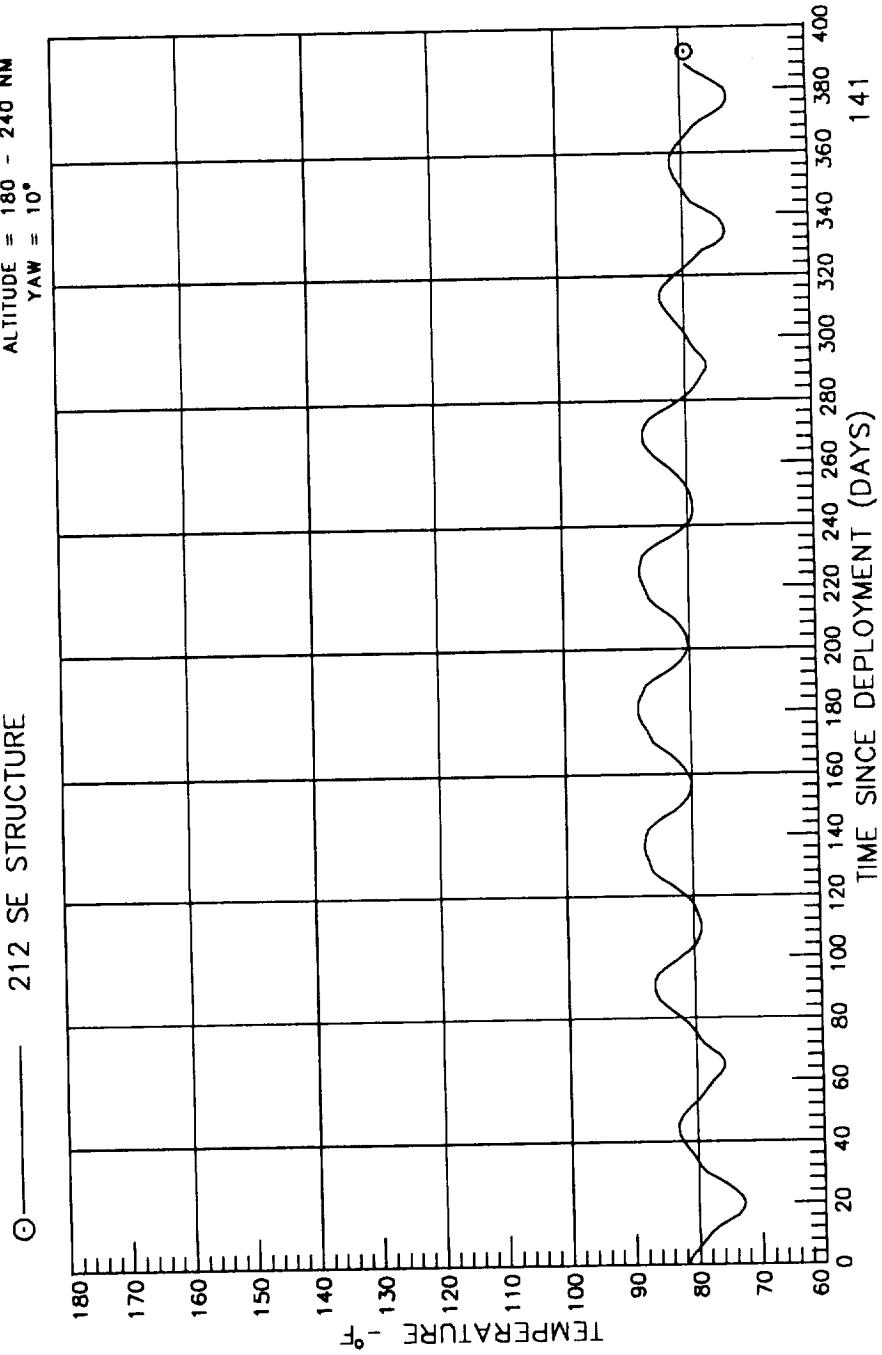
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC H11

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

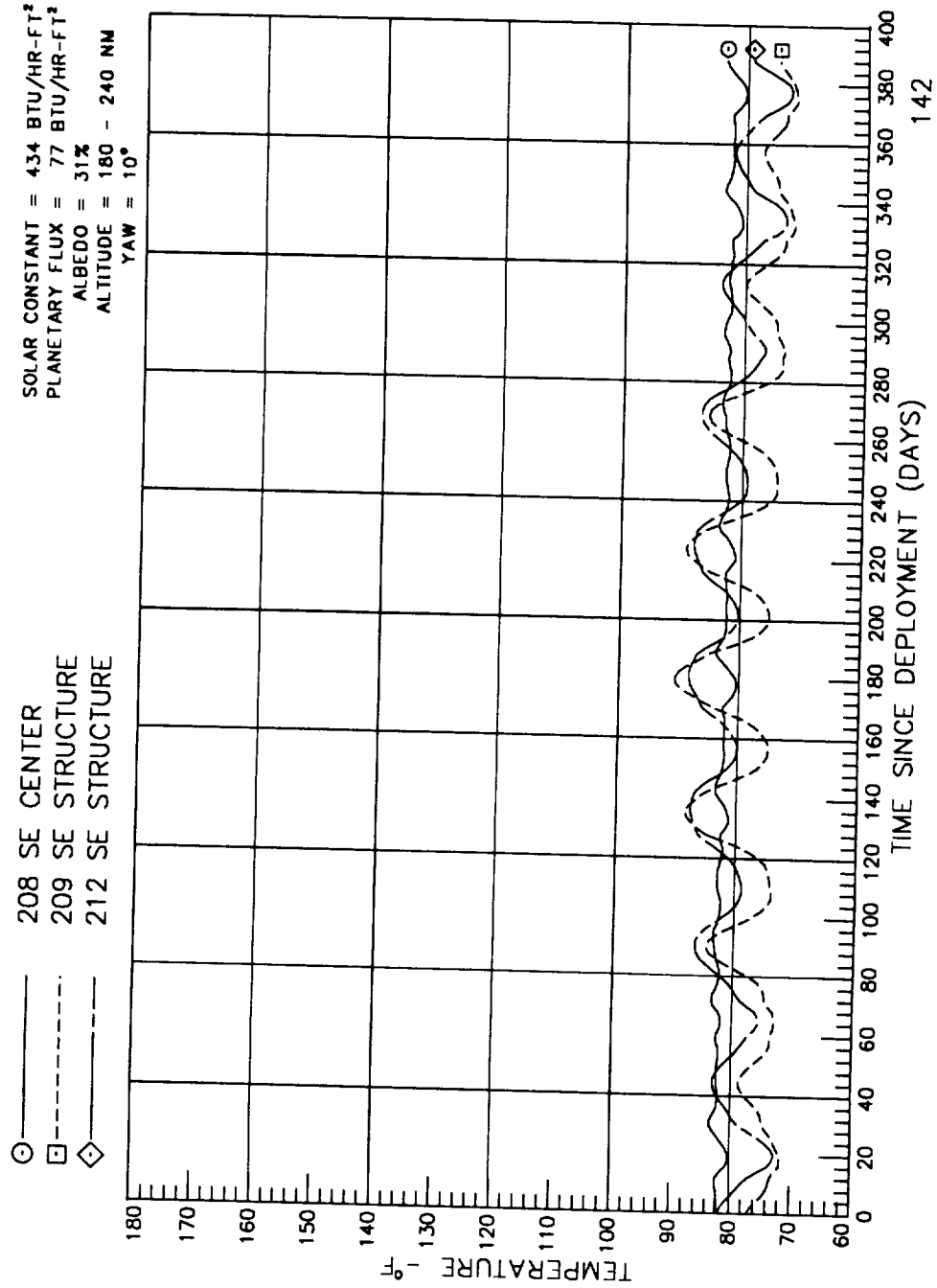
212 SE STRUCTURE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC H12



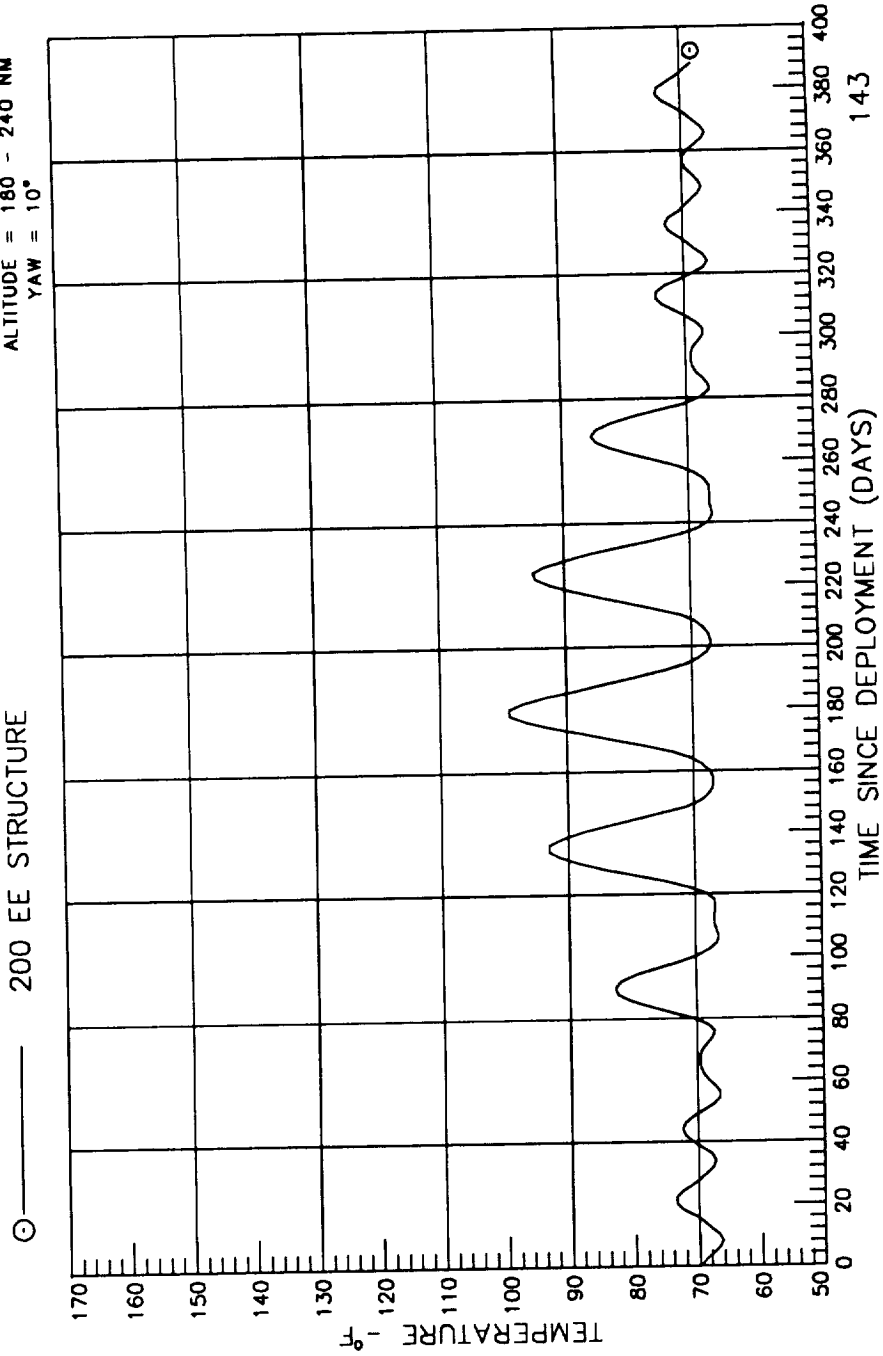
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC G2

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

200 EE STRUCTURE



# LONG DURATION EXPOSURE FACILITY

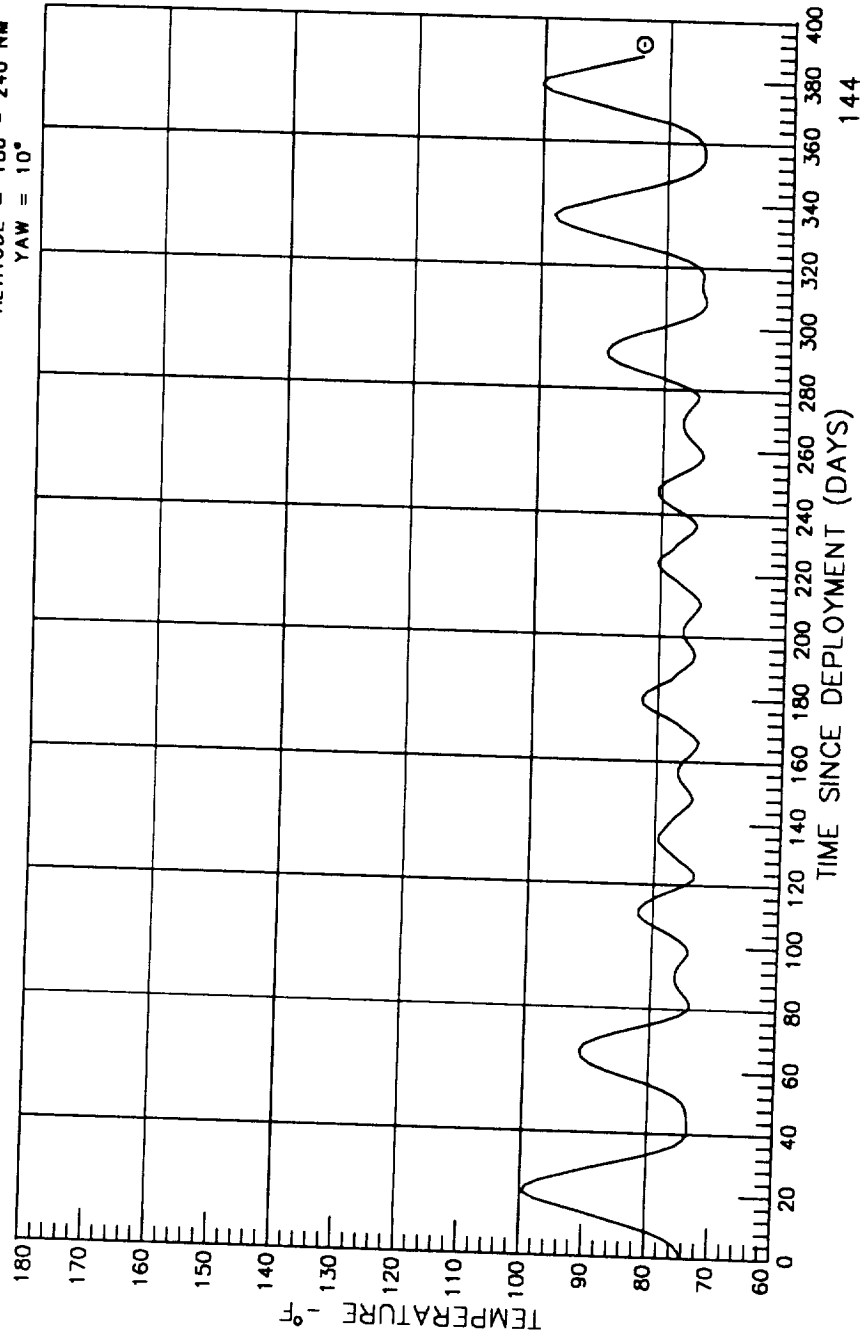
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC G4

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

201 EE STRUCTURE

⊙

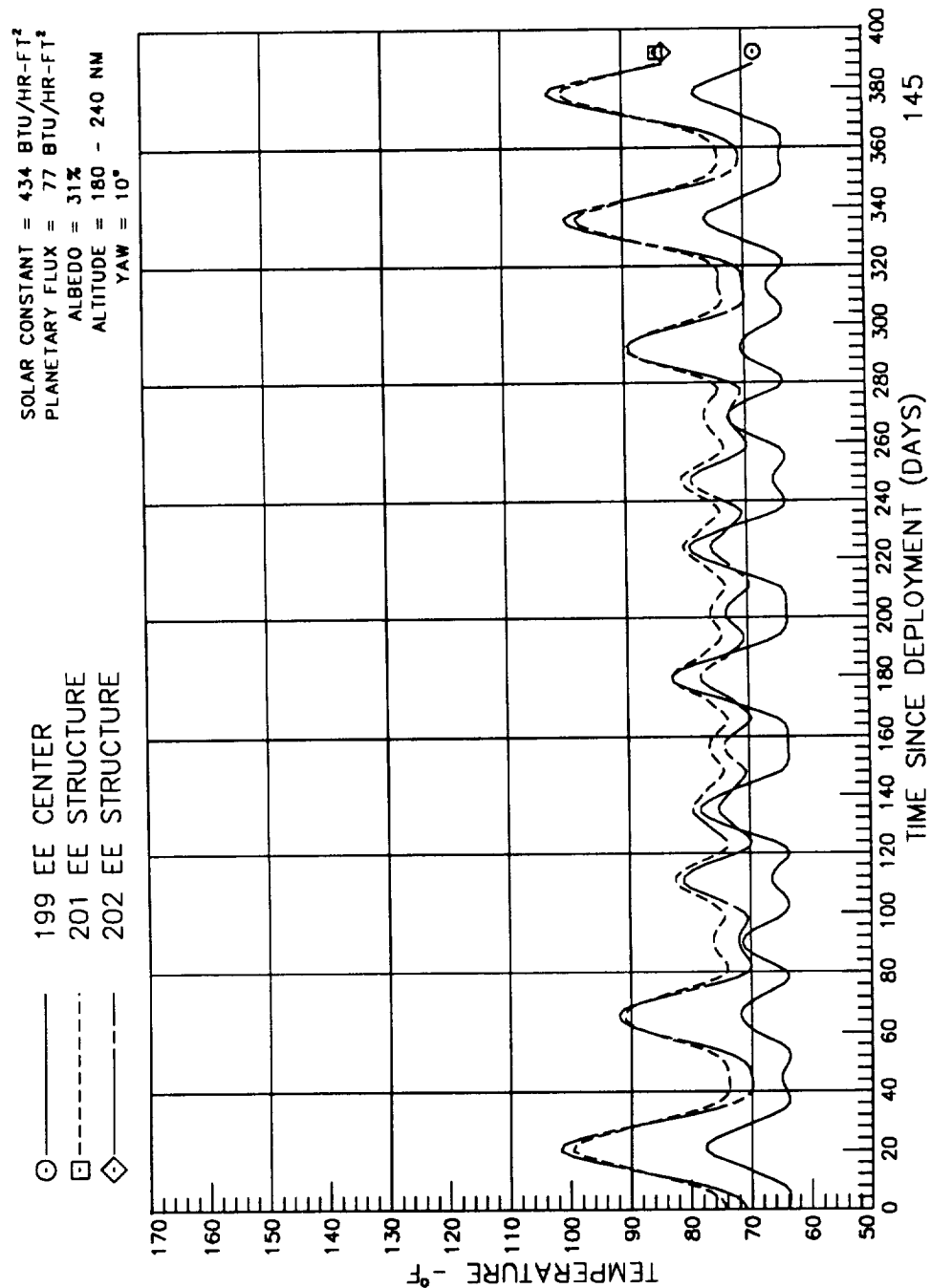




# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC 66



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC G8

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>

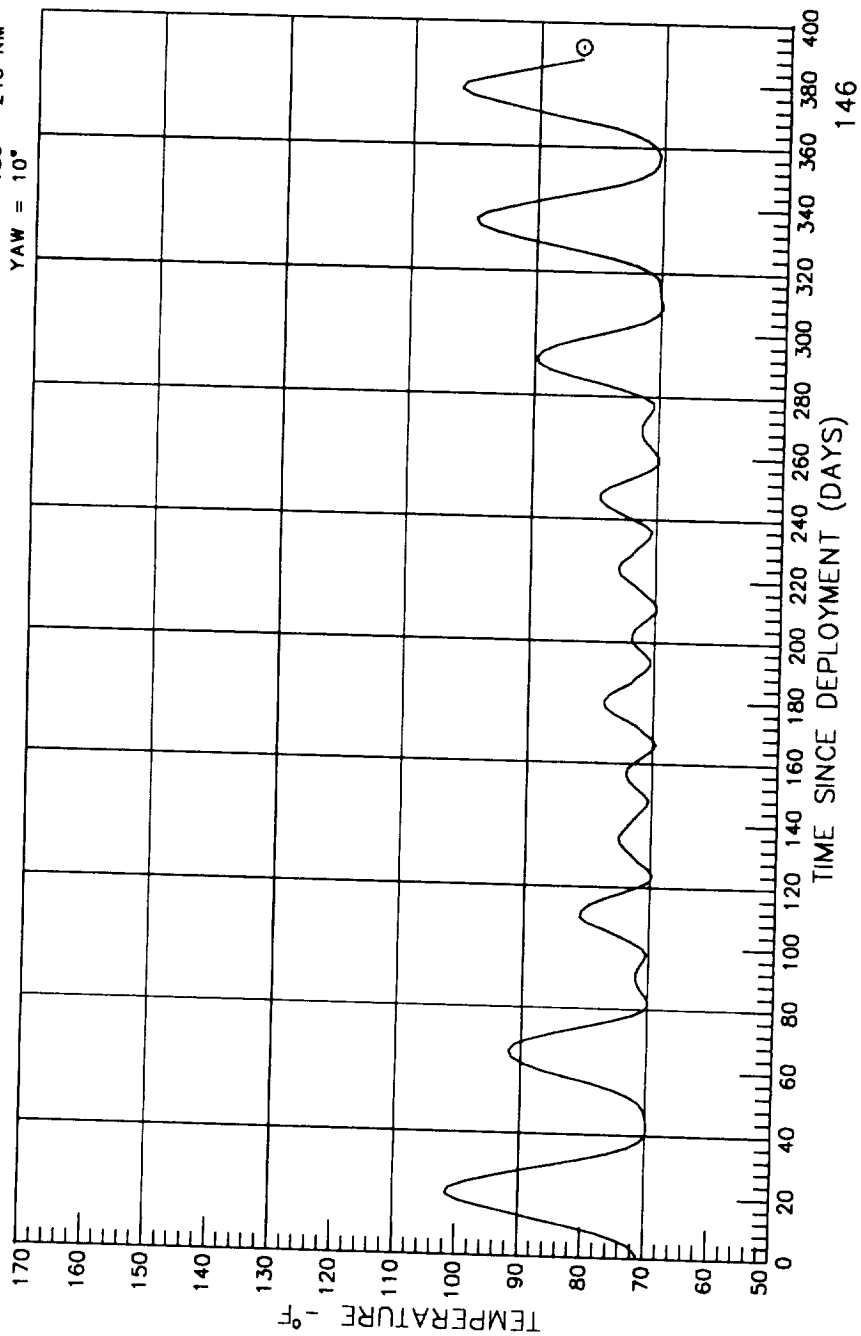
ALBEDO = 31%

ALTITUDE = 180 - 240 NM

YAW = 10°

202 EE STRUCTURE

⊙



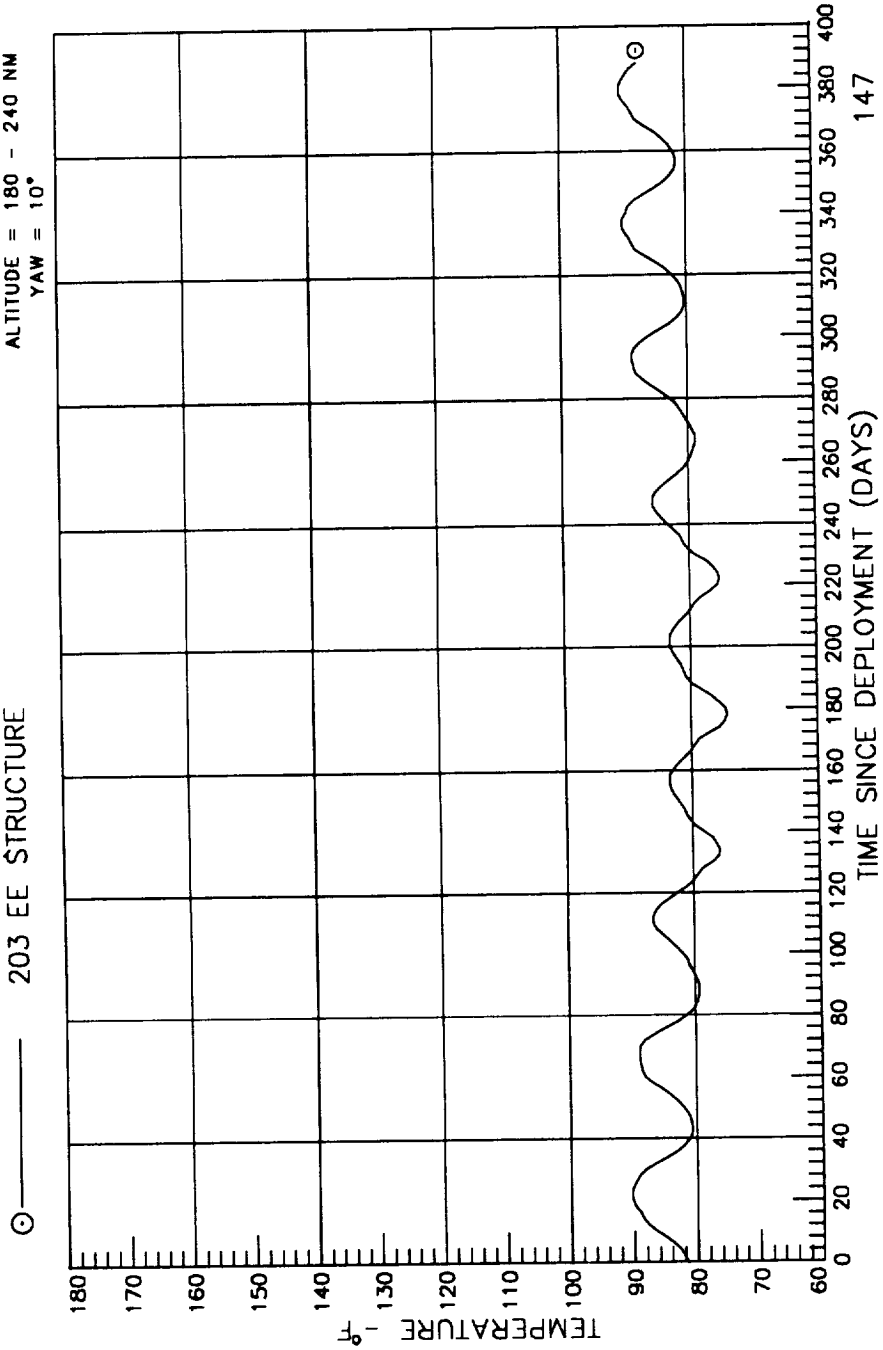
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC G10

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

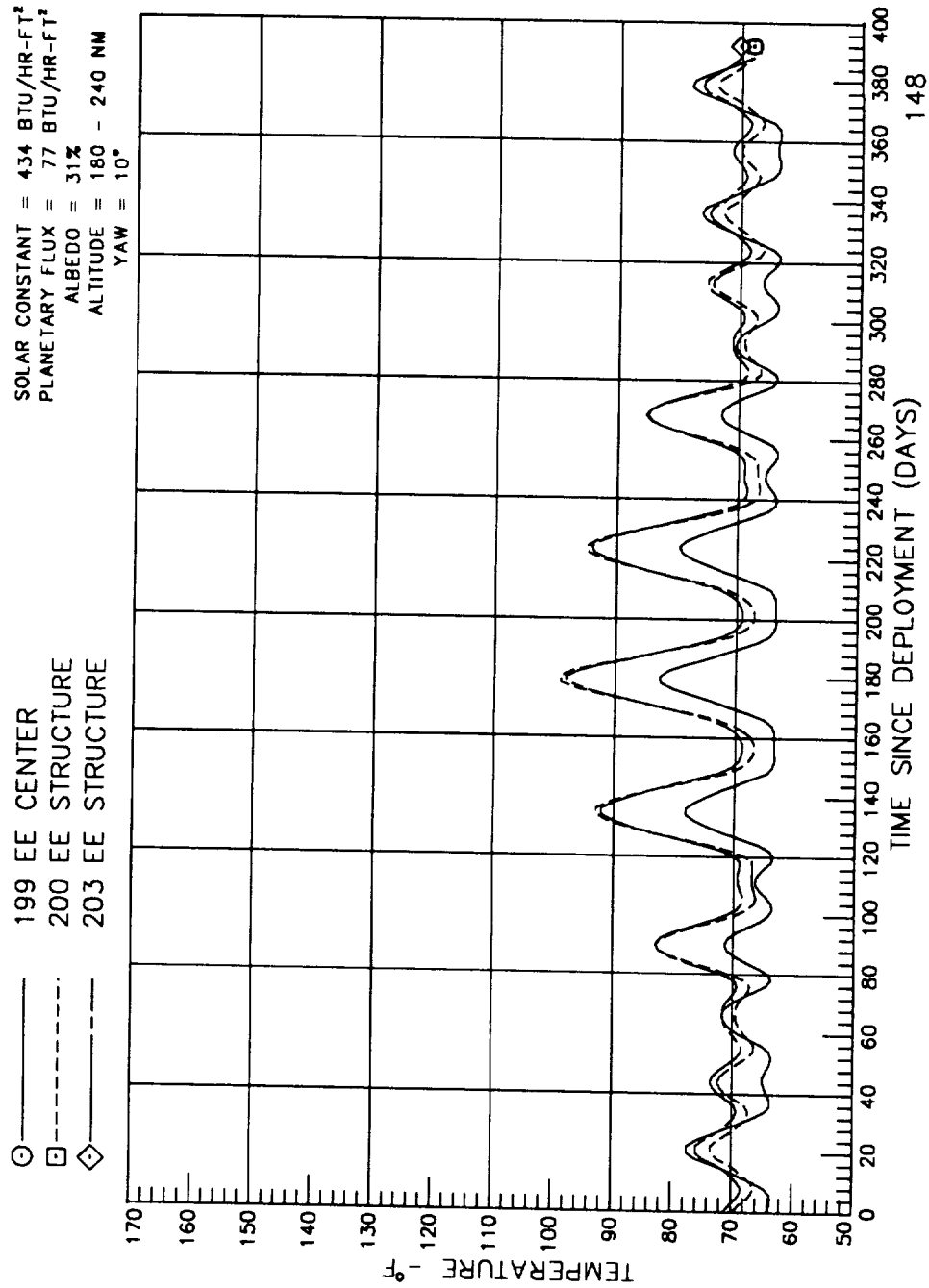
203 EE STRUCTURE



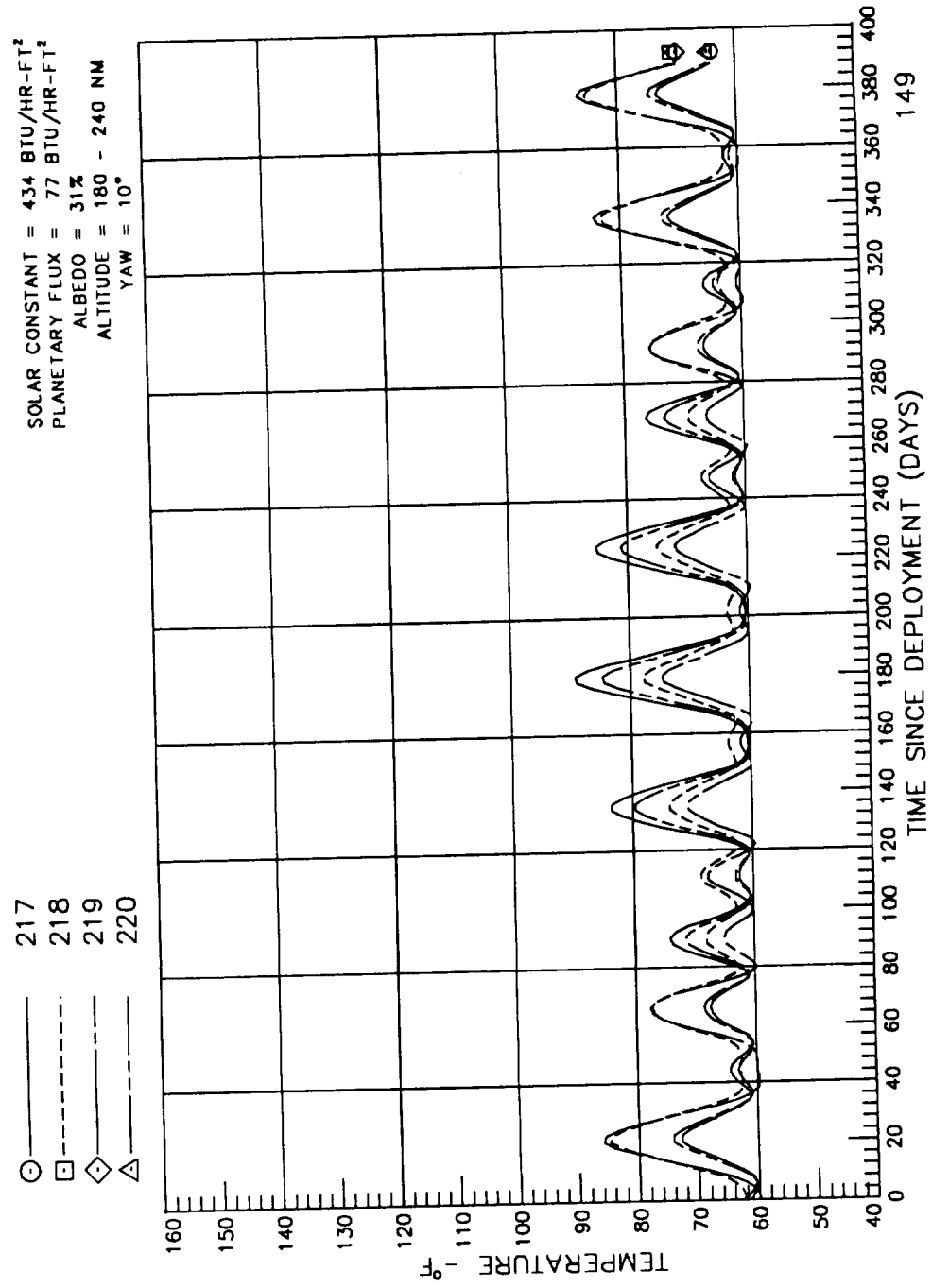
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### STRUCTURE: LOC 612



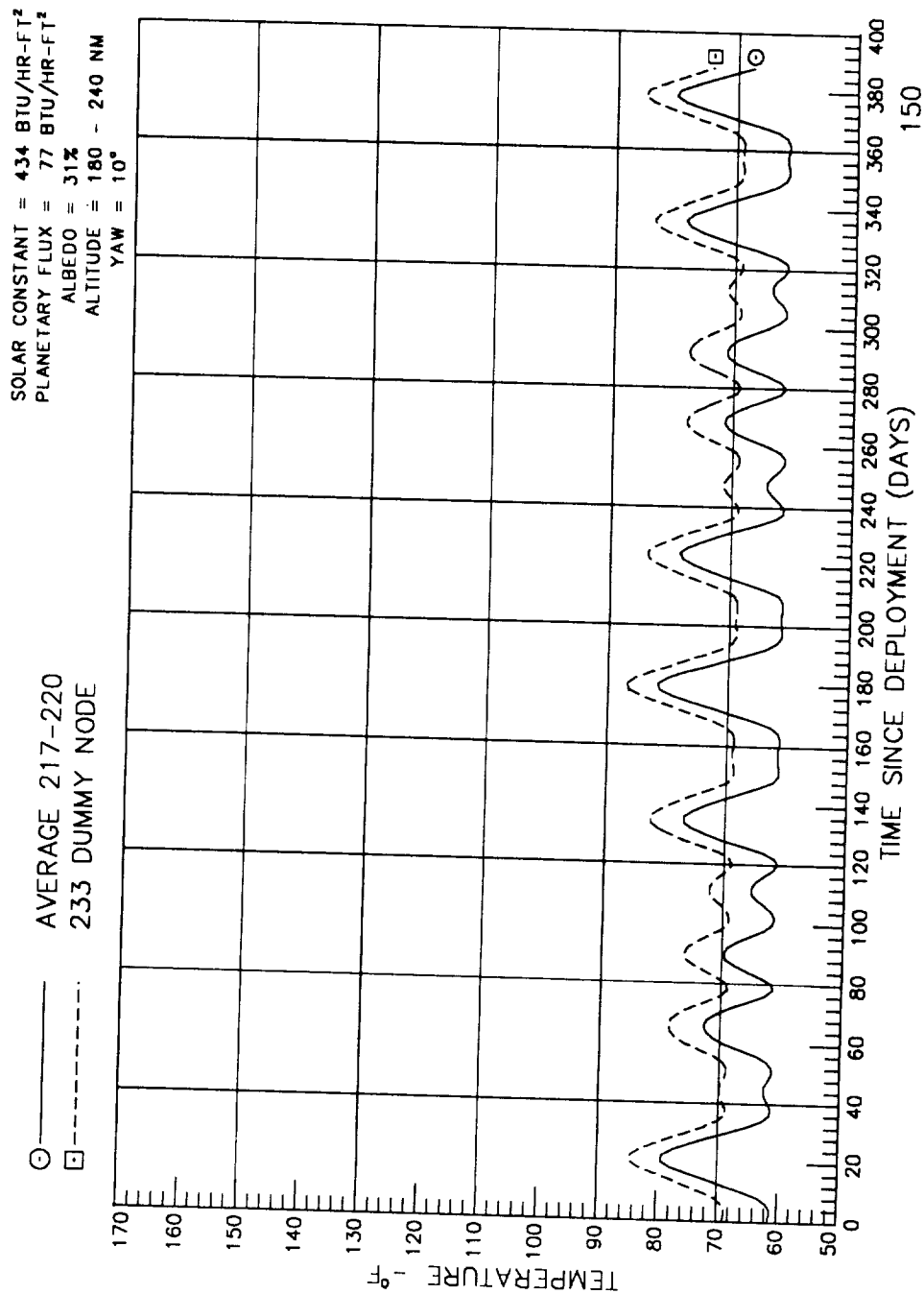
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 CENTER STRUCTURE INTERIOR



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

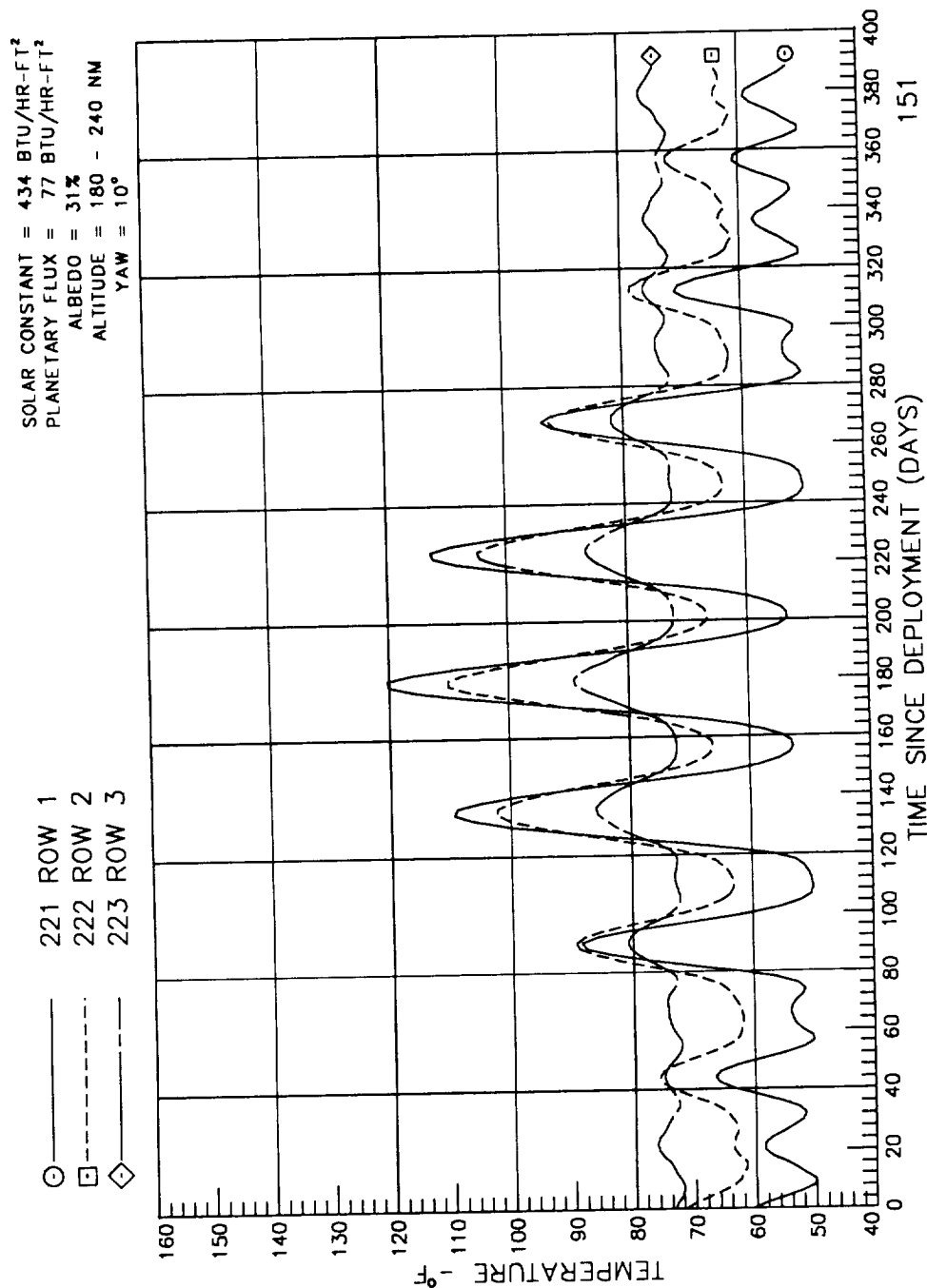
### CENTER STRUCTURE



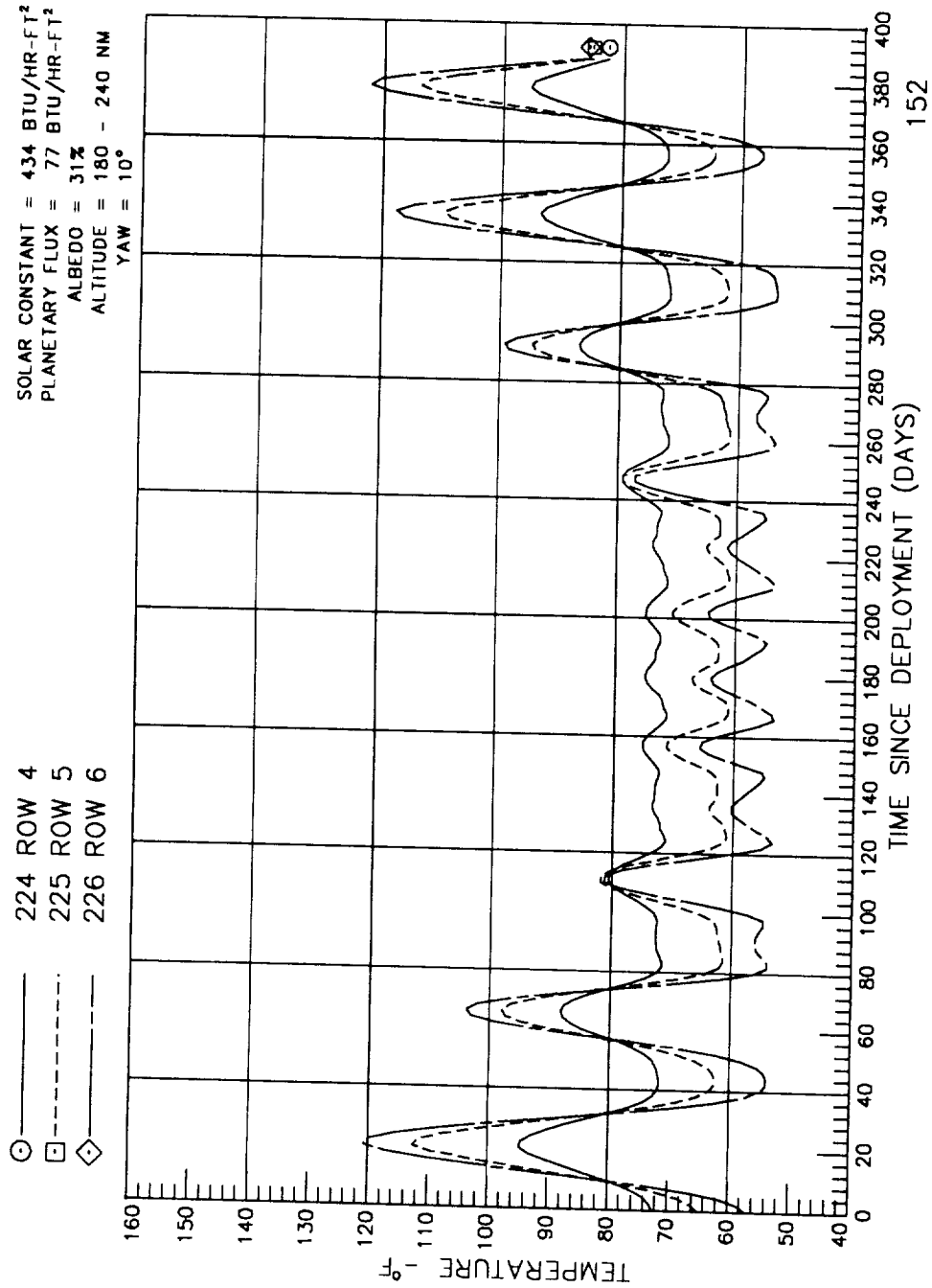
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### CENTER RING ROWS 1-3



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 CENTER RING ROWS 4-6

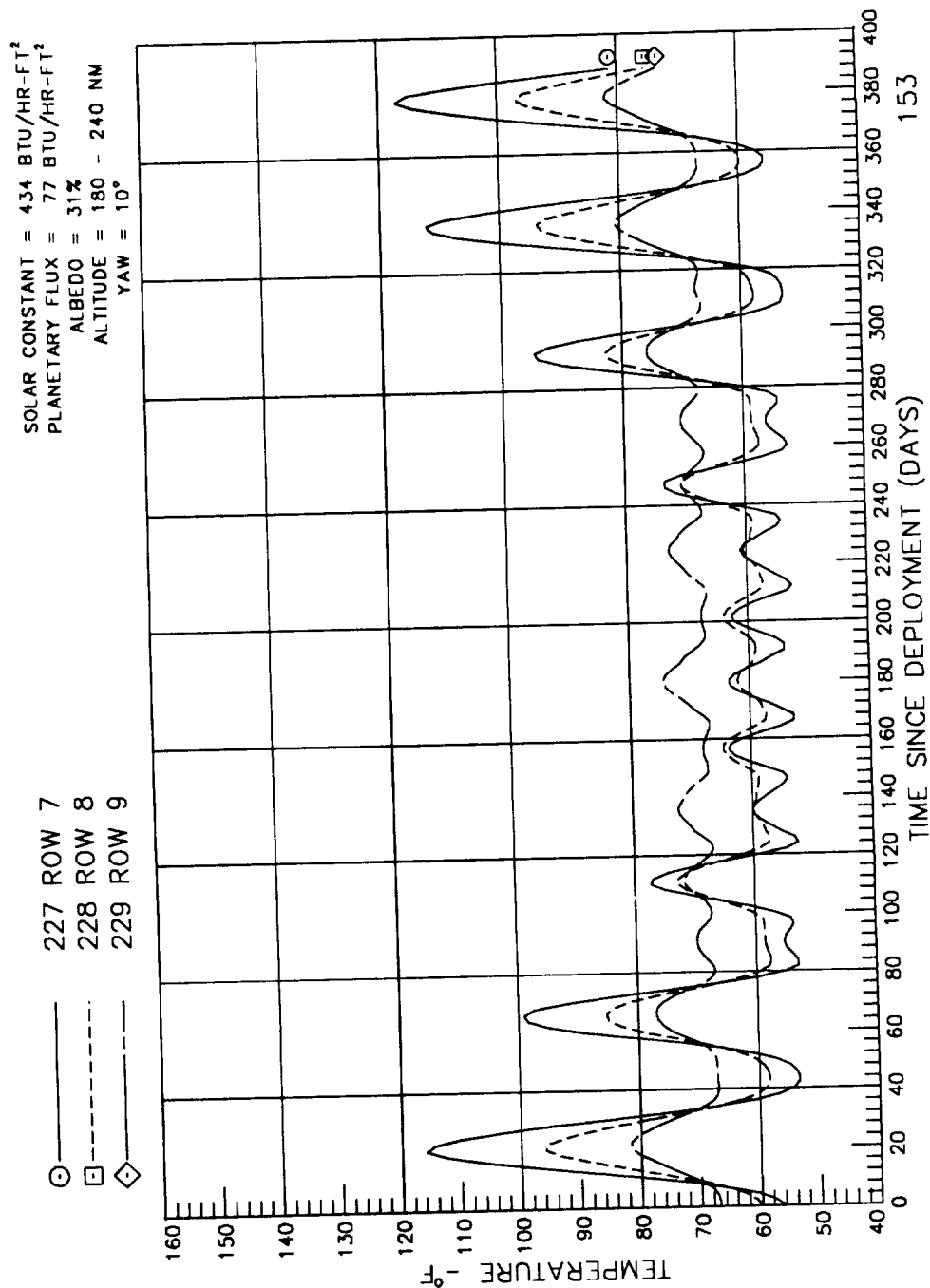




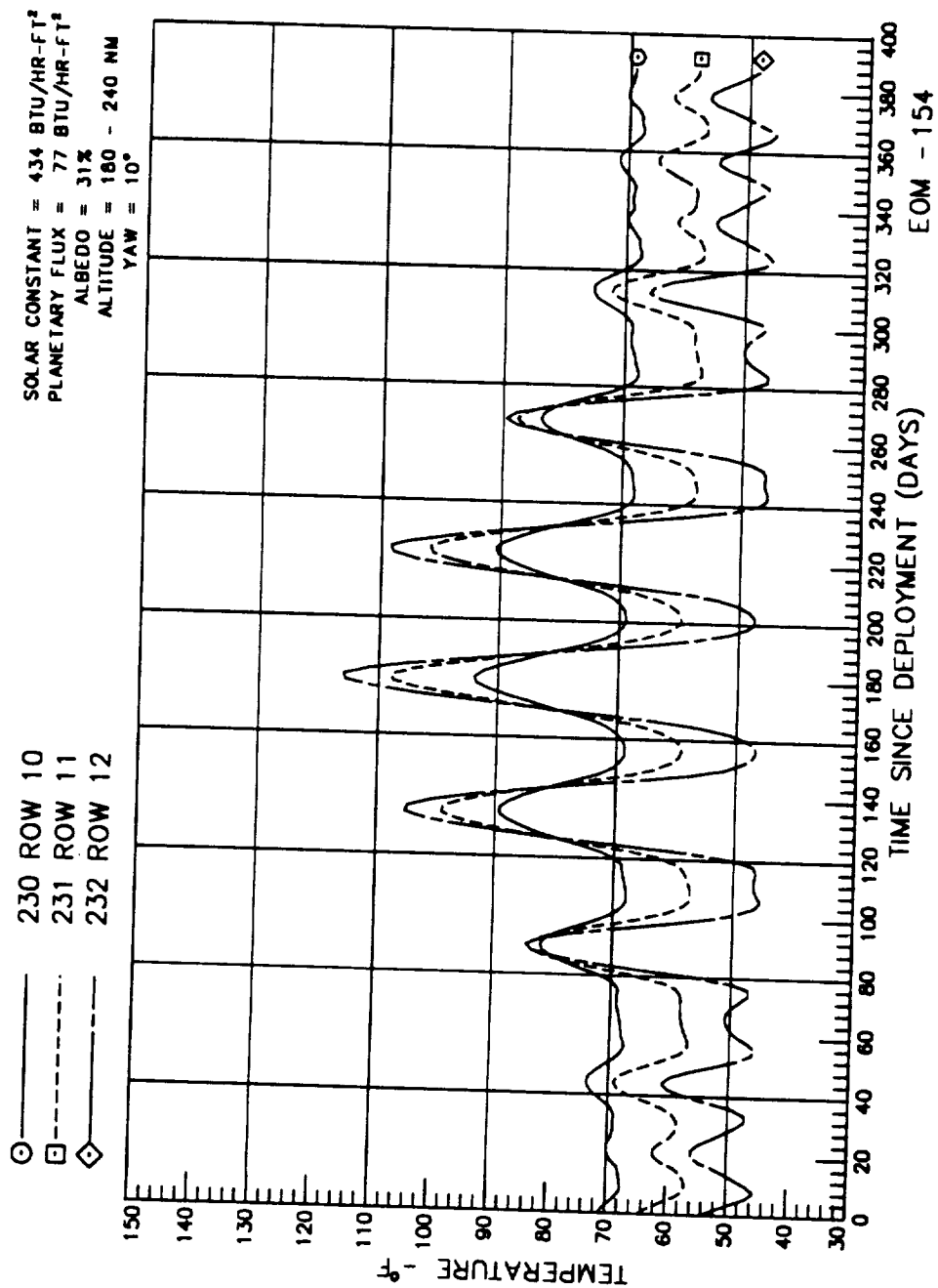
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### CENTER RING ROWS 7-9



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 CENTER RING ROWS 10-12



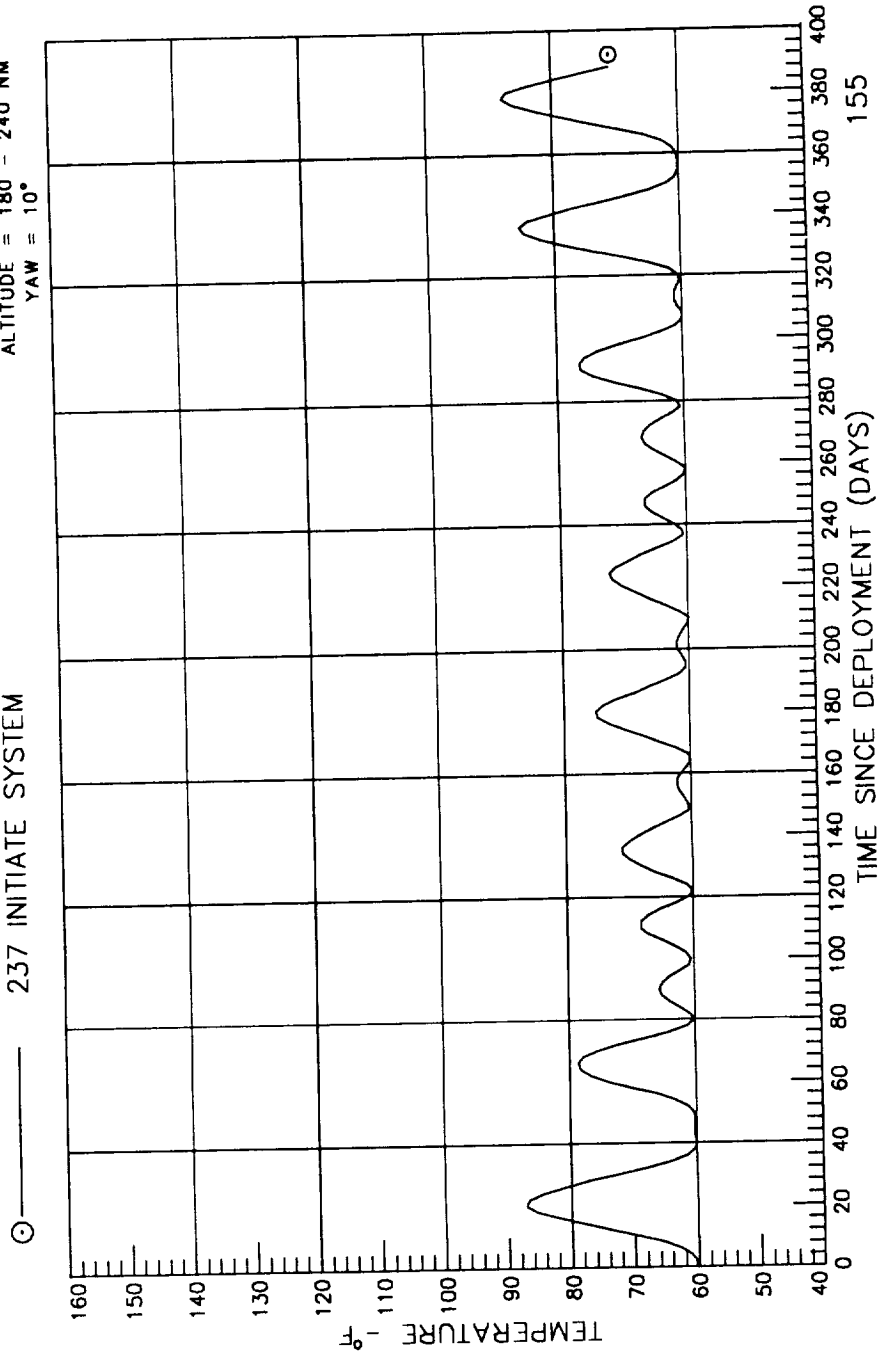
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### INITIATE SYSTEM

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

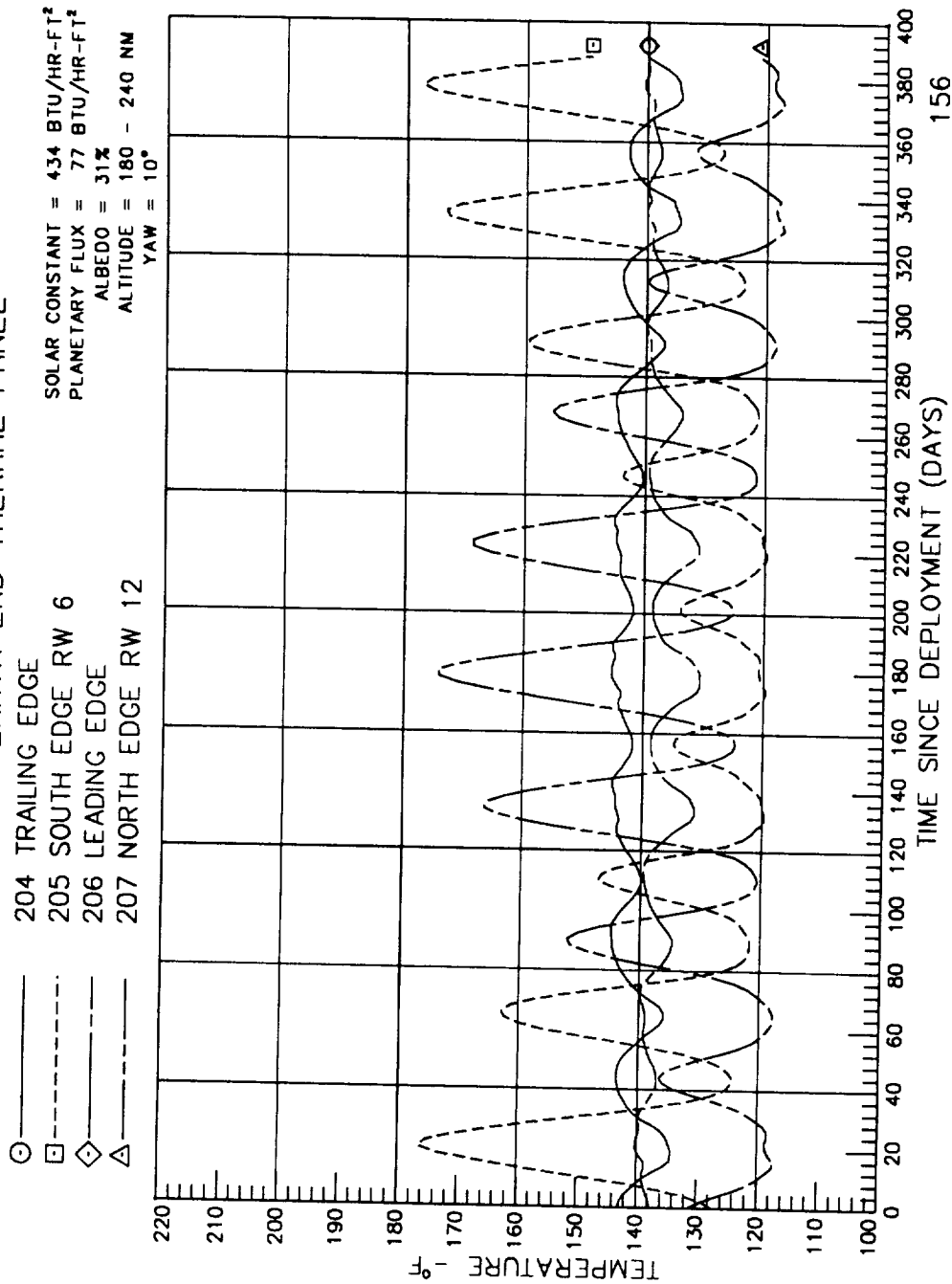
237 INITIATE SYSTEM



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

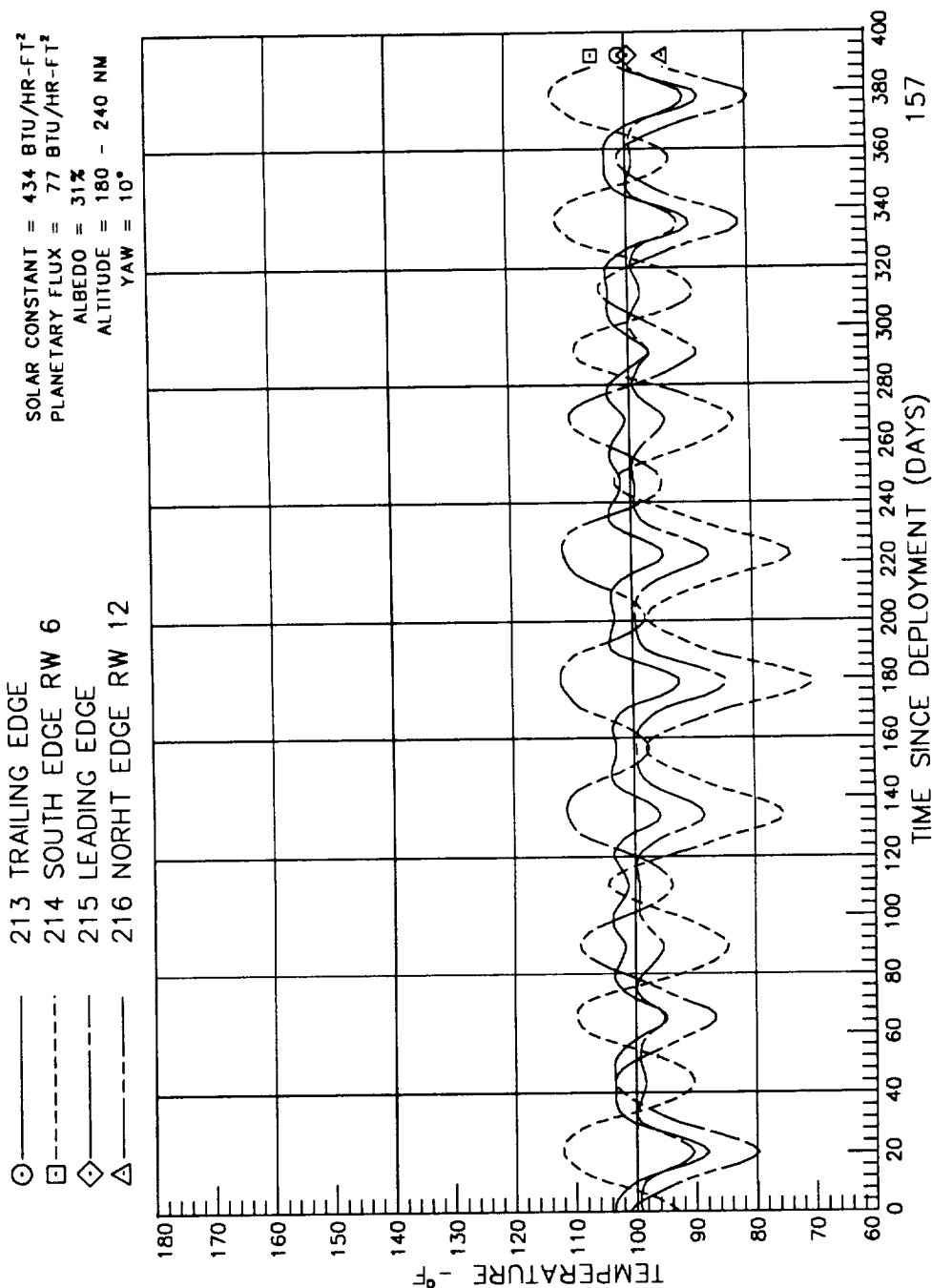
### EARTH END THERMAL PANEL



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

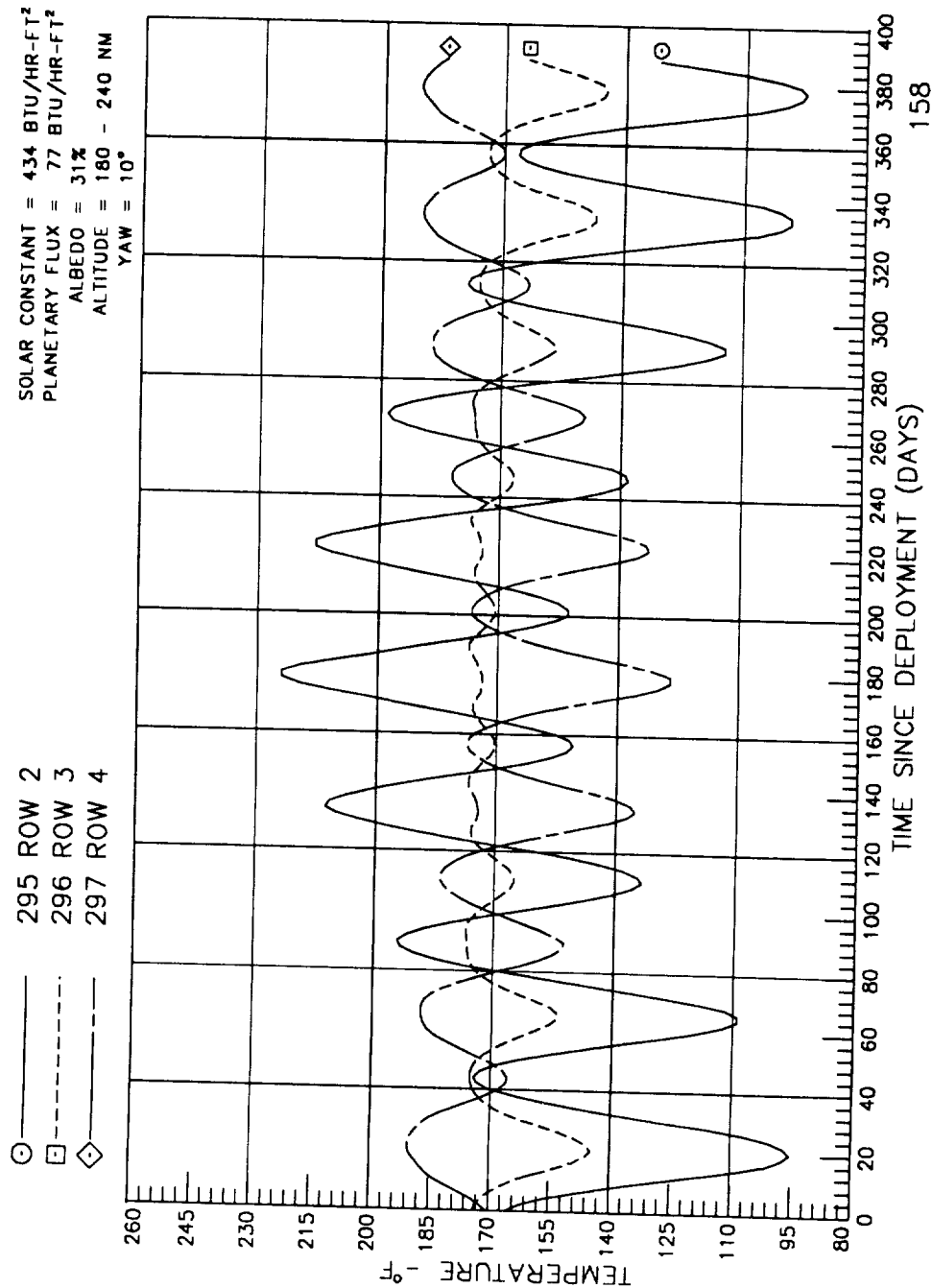
### SPACE END THERMAL PANEL



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### EARTH END THERMAL PANEL SIDE



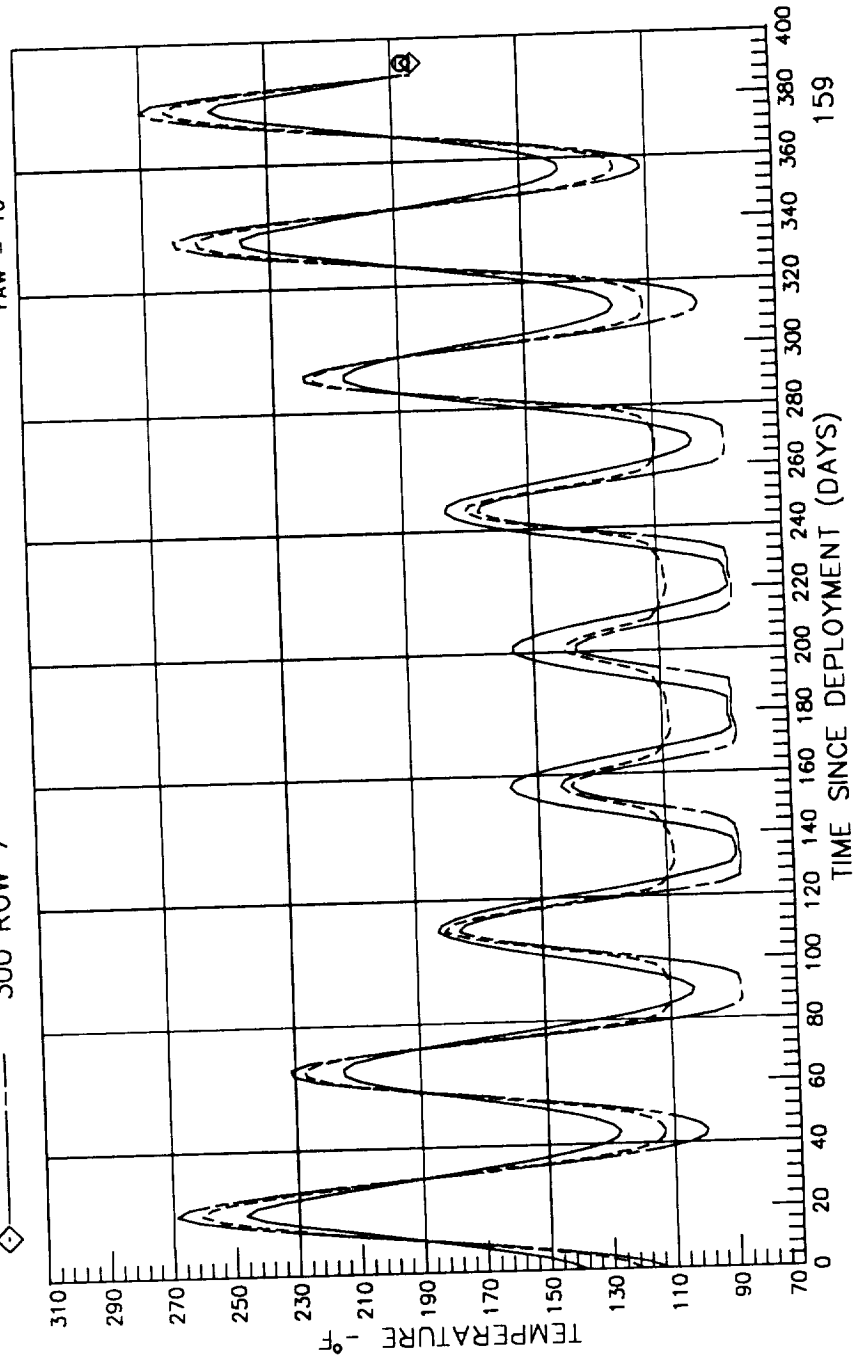
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

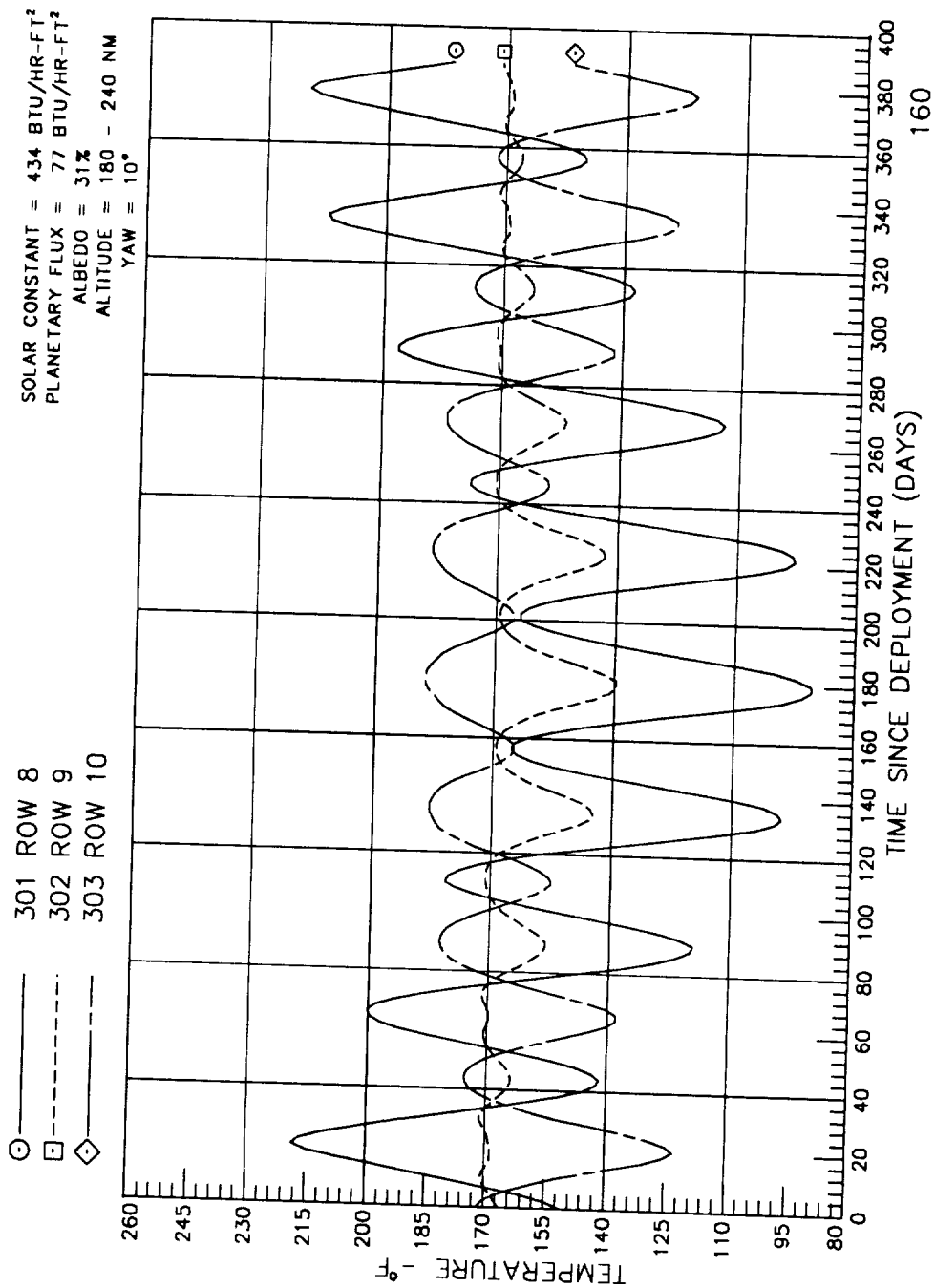
### EARTH END THERMAL PANEL SIDE

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 298 ROW 5  
 □ 299 ROW 6  
 ◇ 300 ROW 7

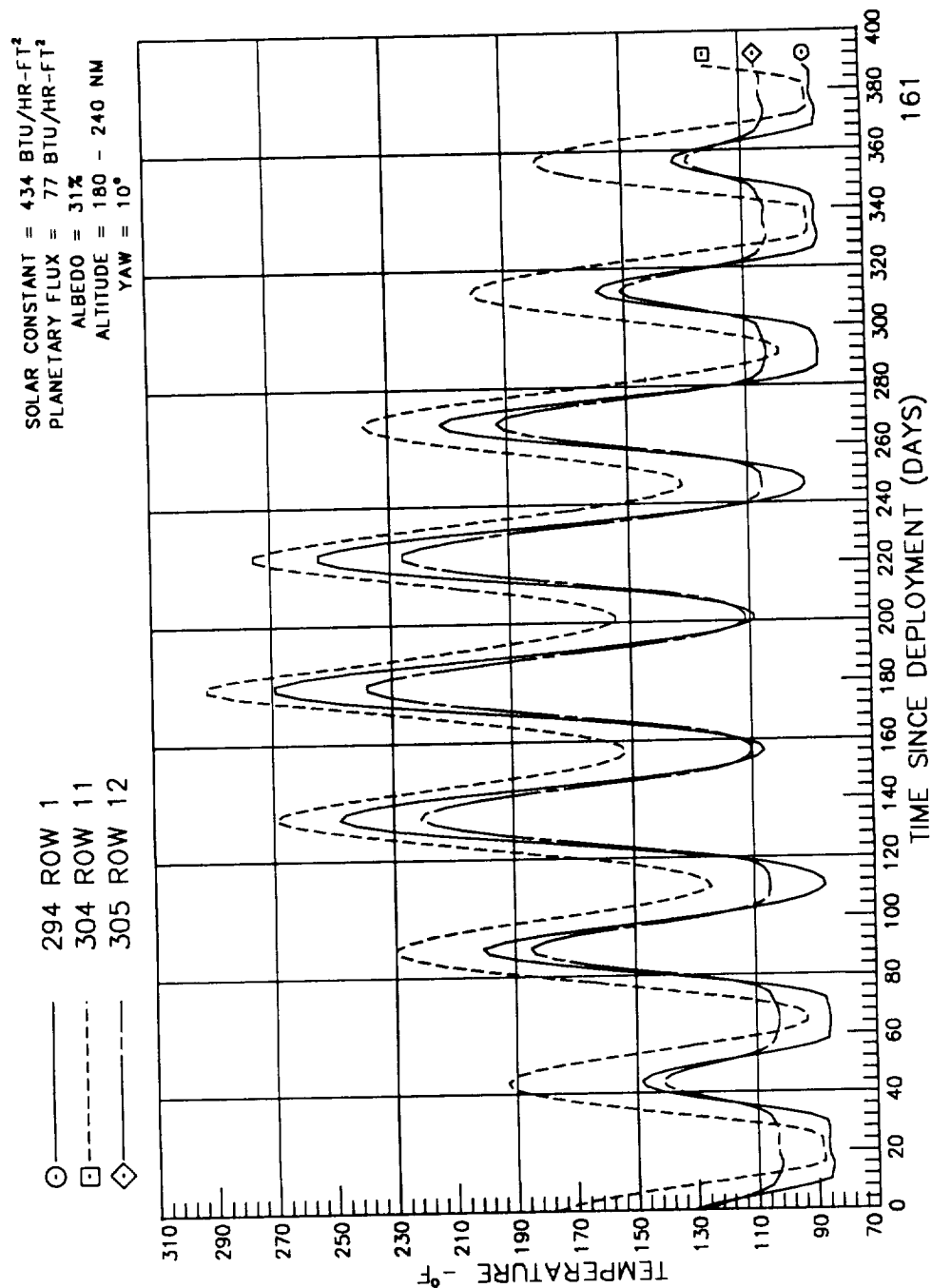


# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 EARTH END THERMAL PANEL SIDE

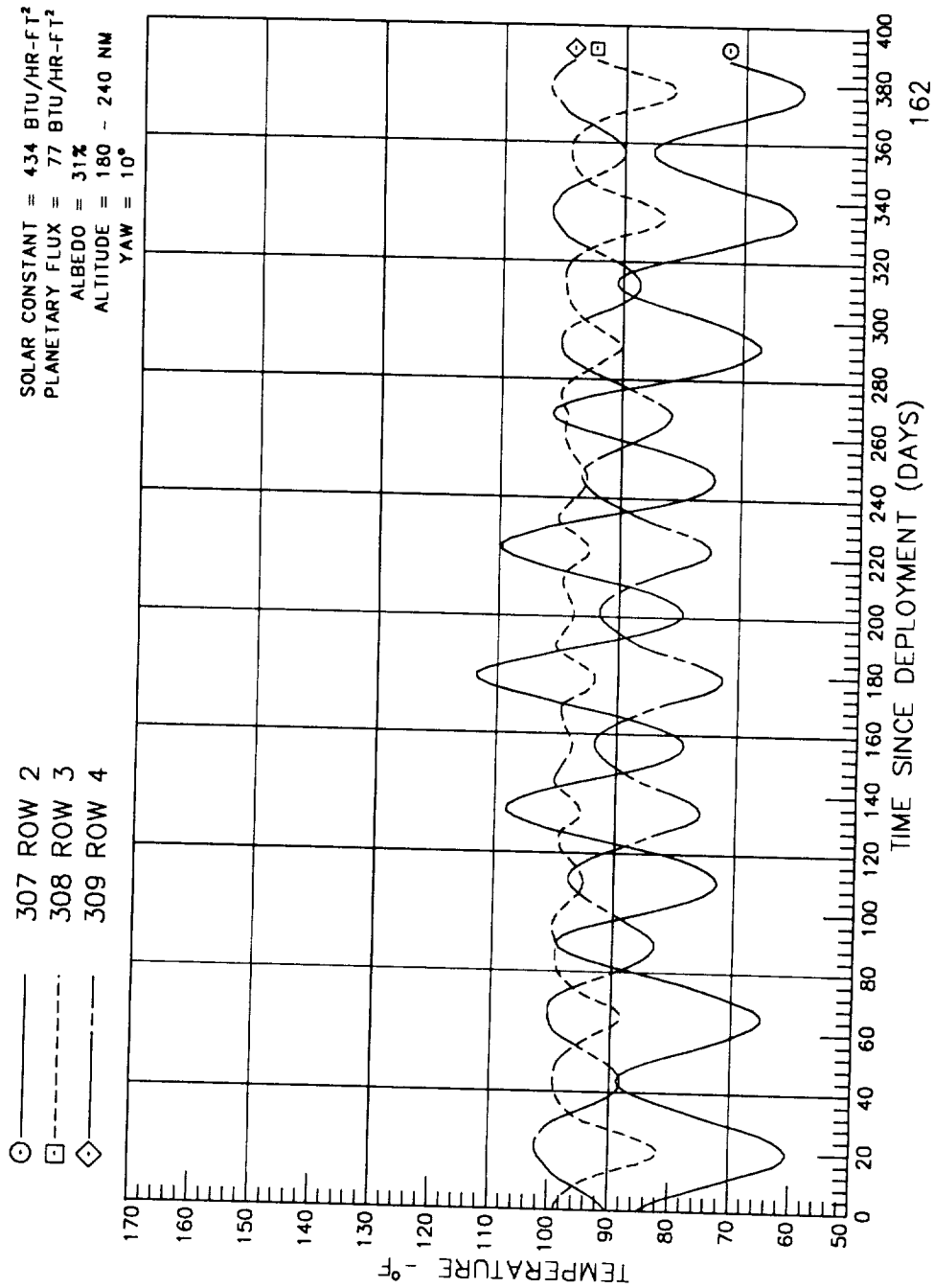




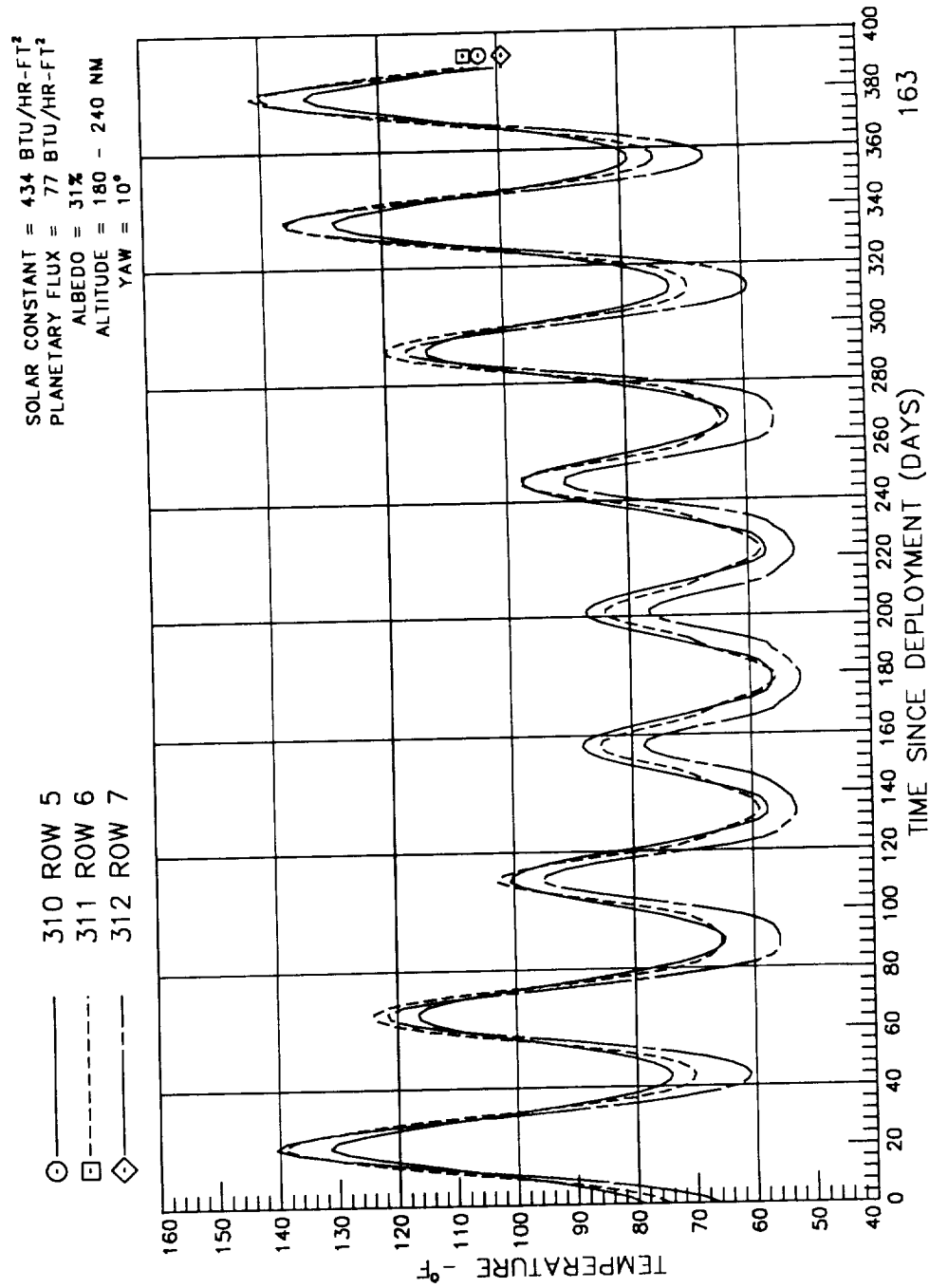
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 EARTH END THERMAL PANEL SIDE



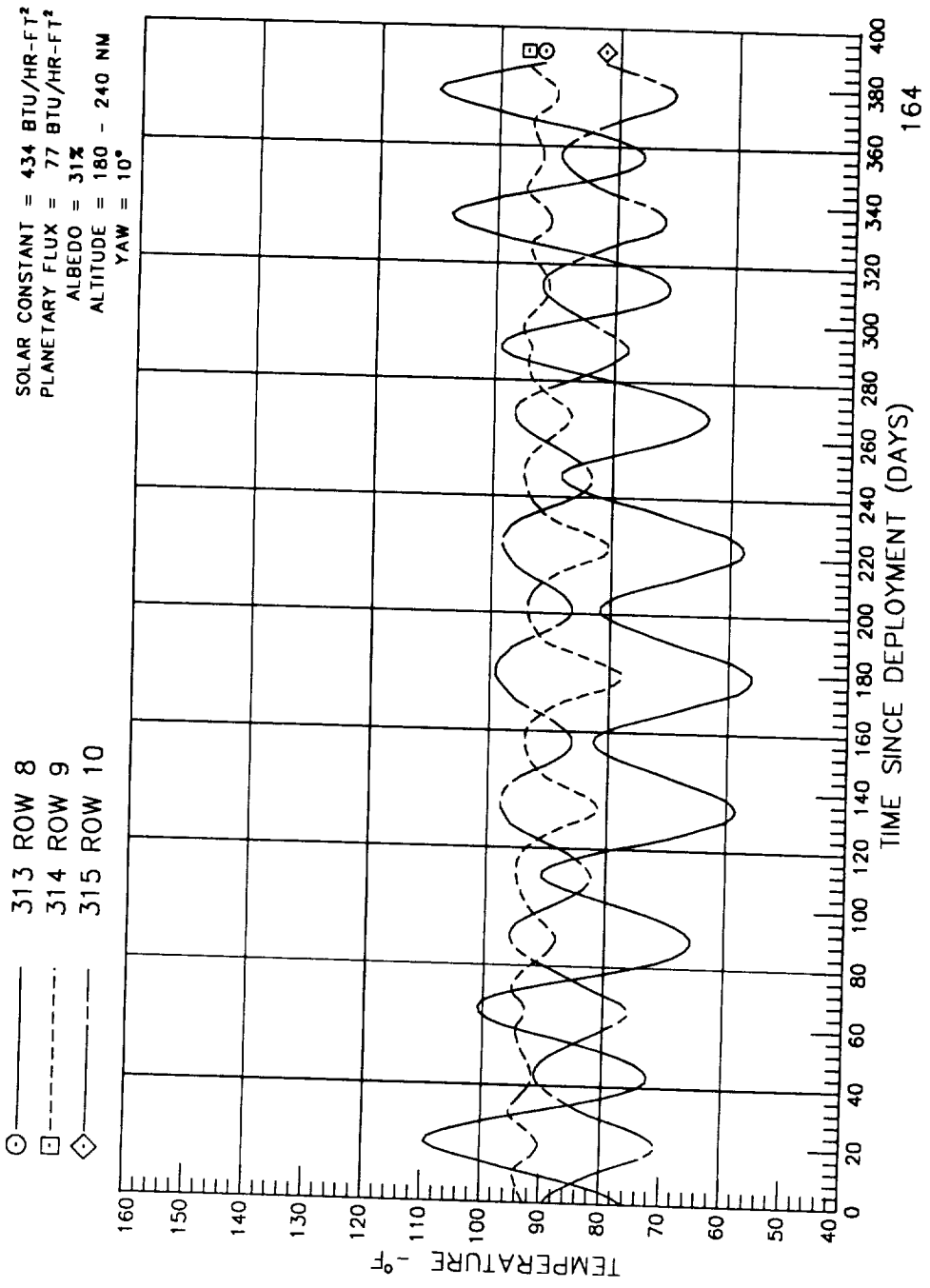
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 SPACE END THERMAL PANEL SIDE



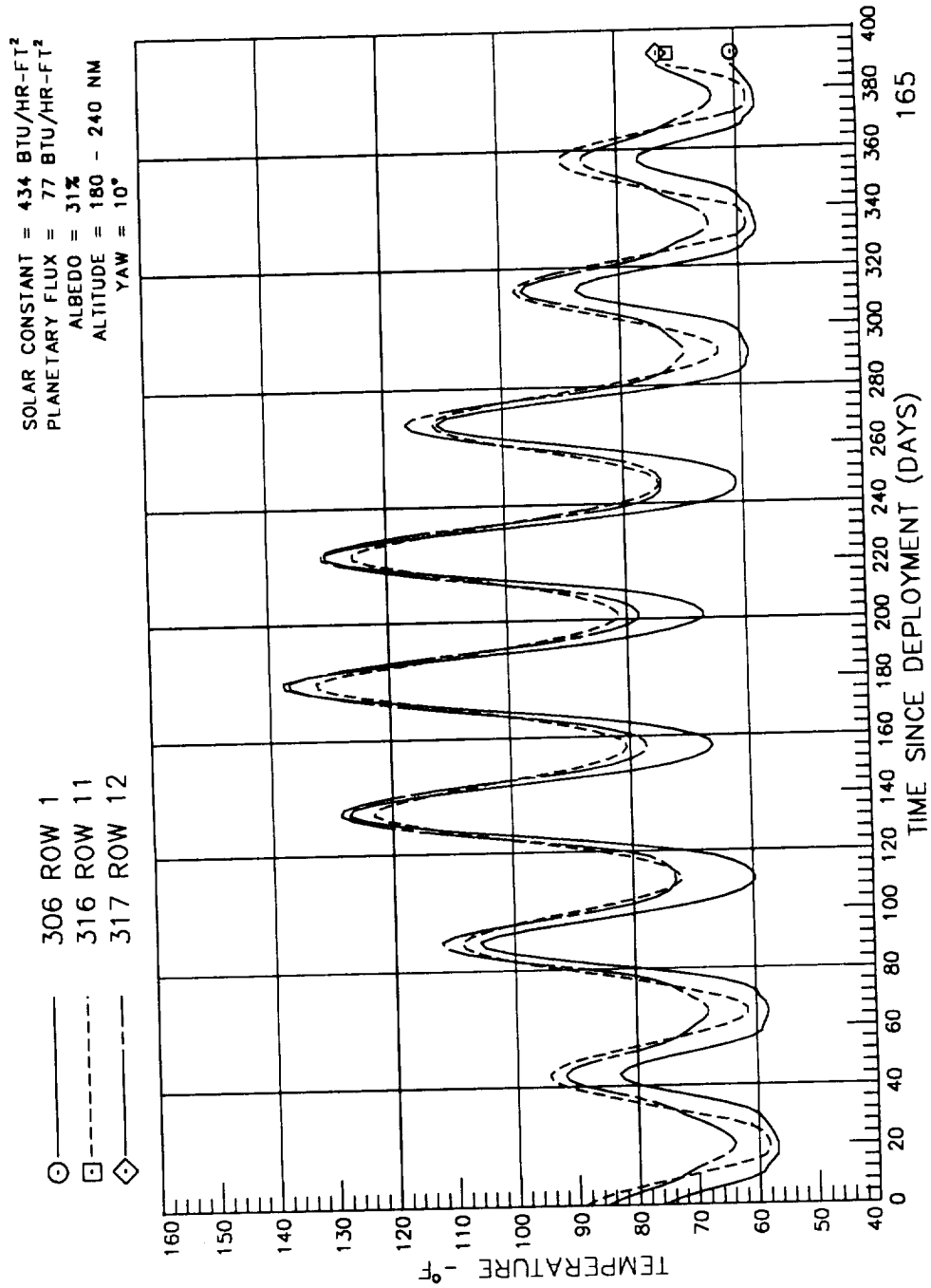
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 SPACE END THERMAL PANEL SIDE



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 SPACE END THERMAL PANEL SIDE



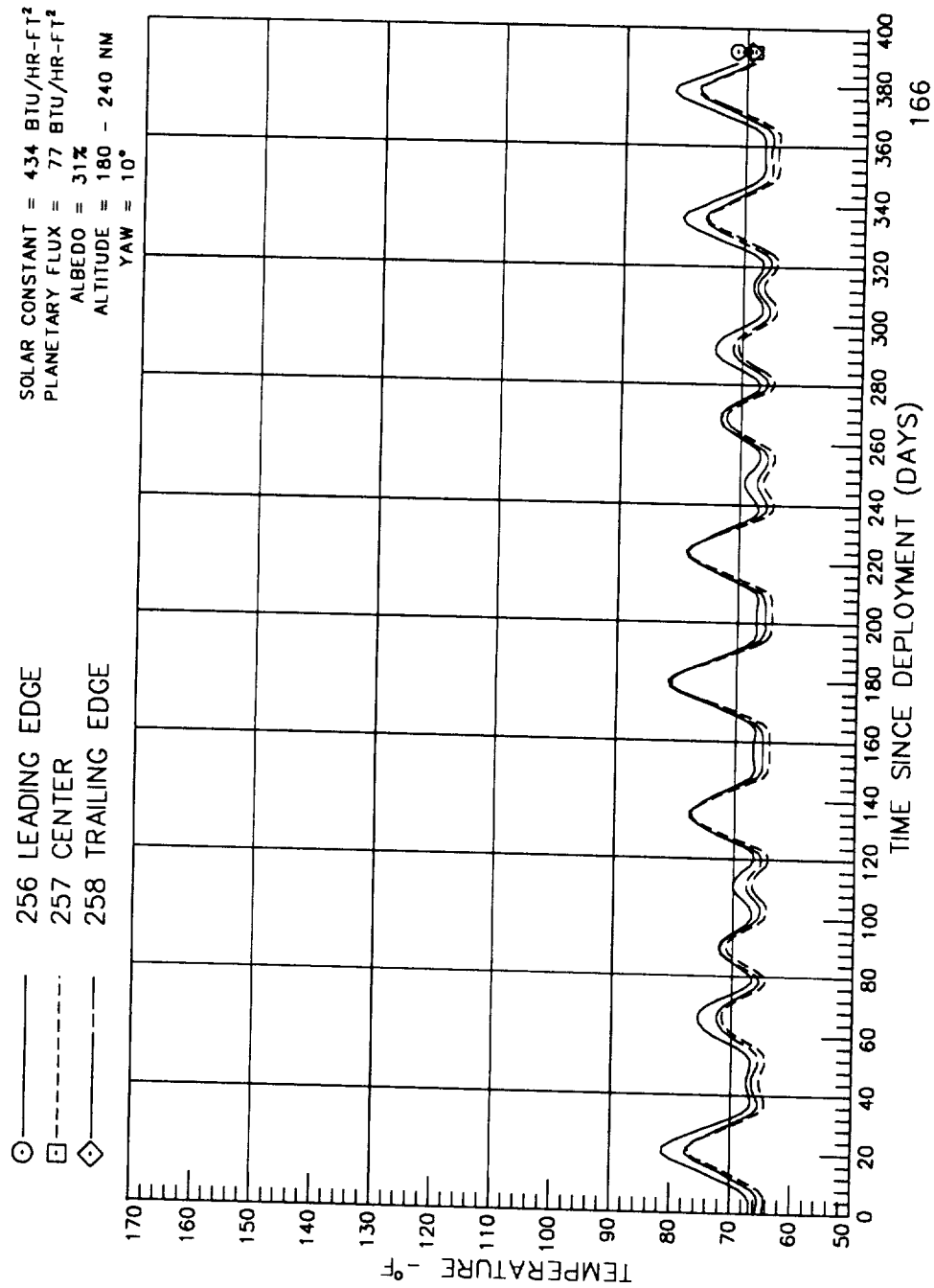
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 SPACE END THERMAL PANEL SIDE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### EARTH DUMMY COVER PLATES



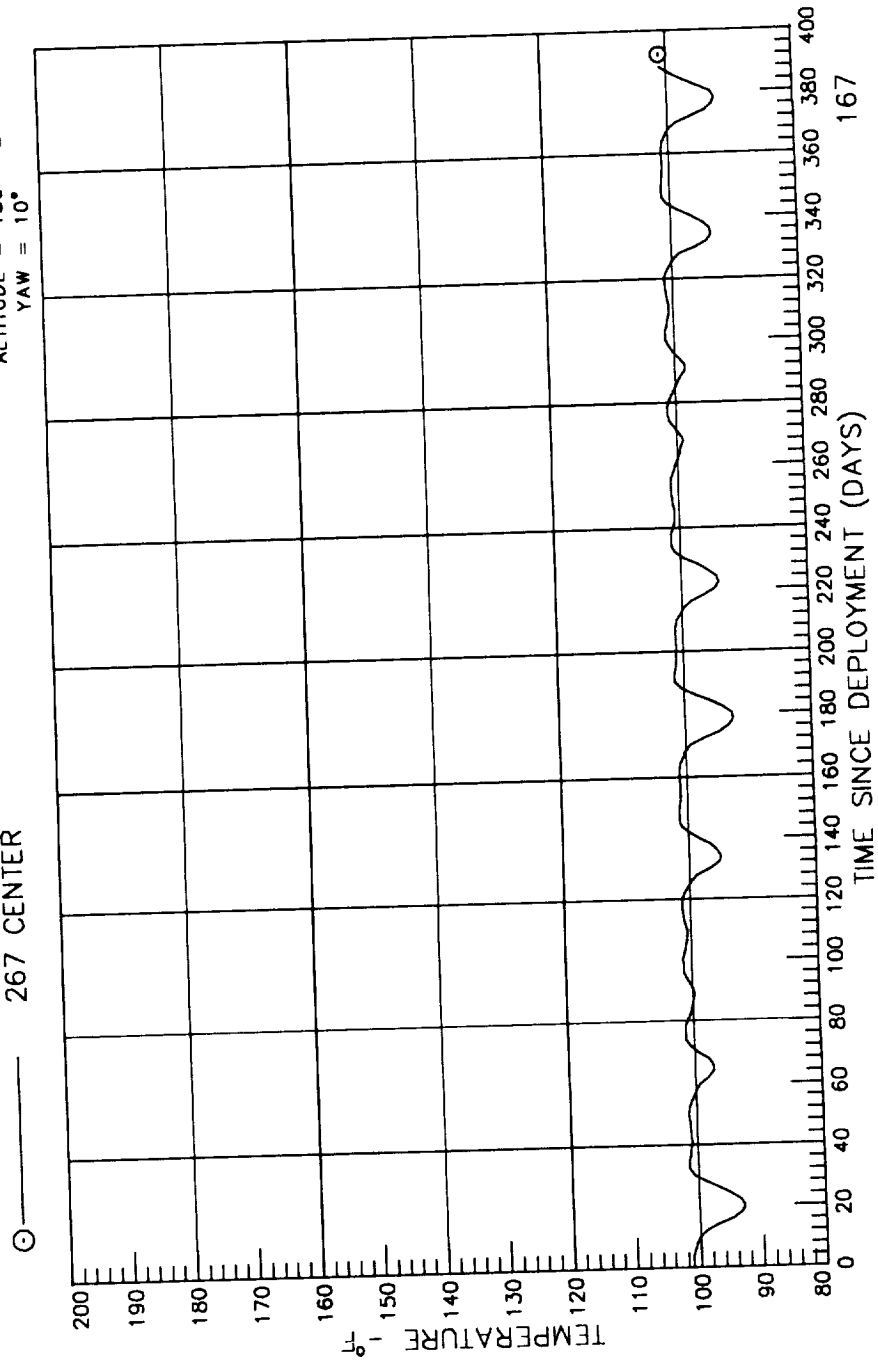
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

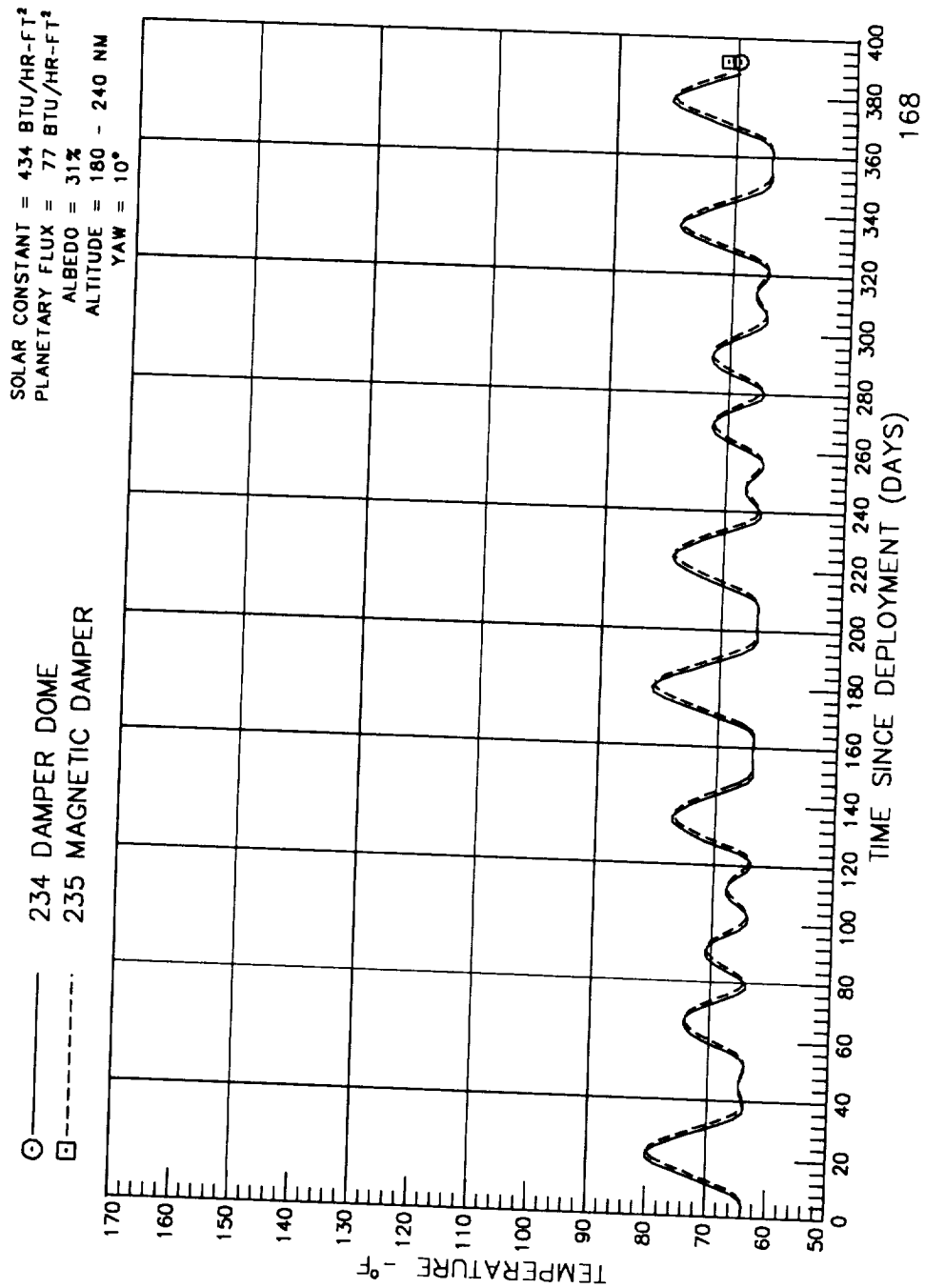
### SPACE DUMMY COVER PLATE CENTER

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

267 CENTER



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 MAGNETIC DAMPER & SHROUD





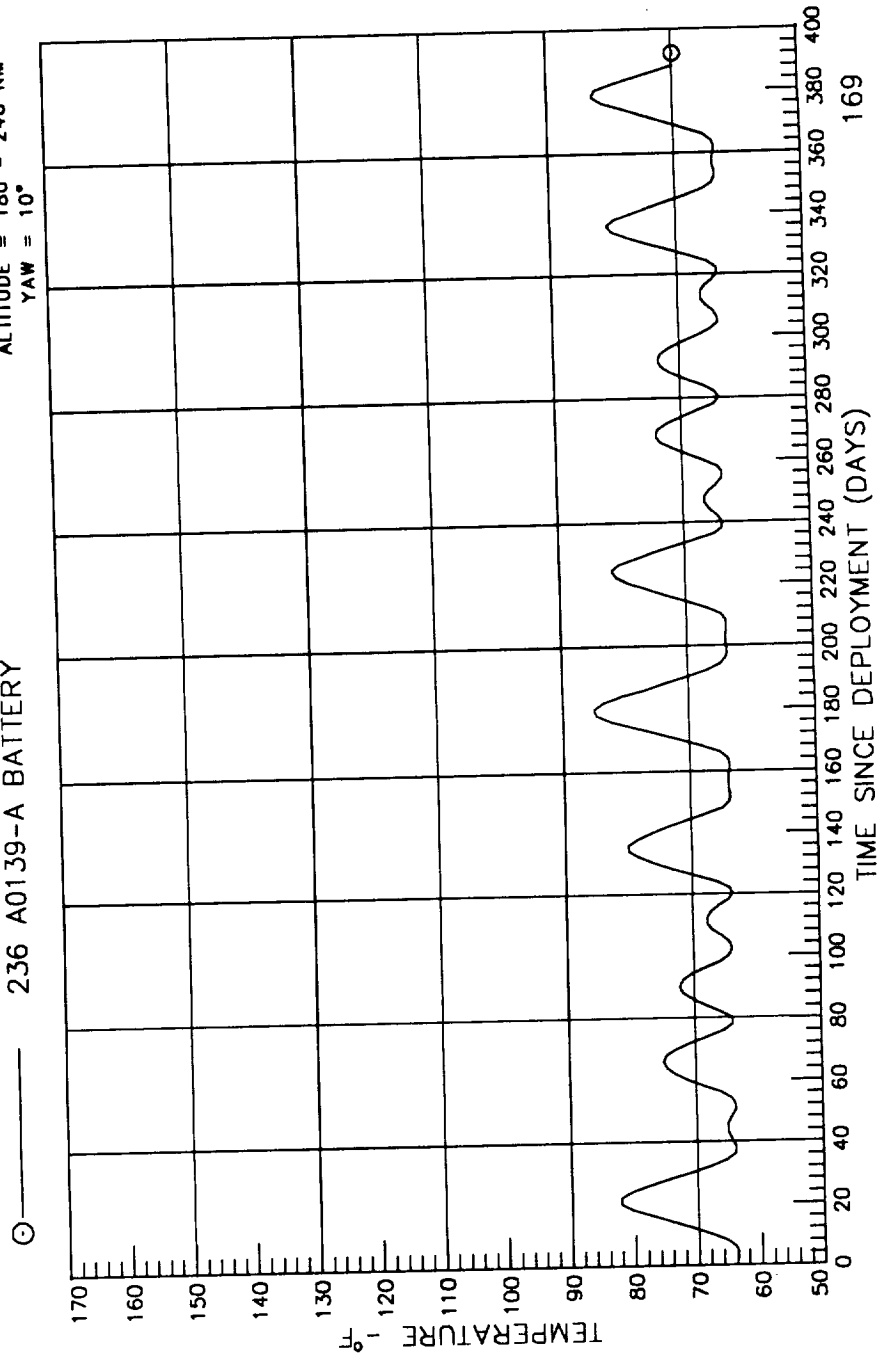
# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### BATTERIES FOR A0139-A

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

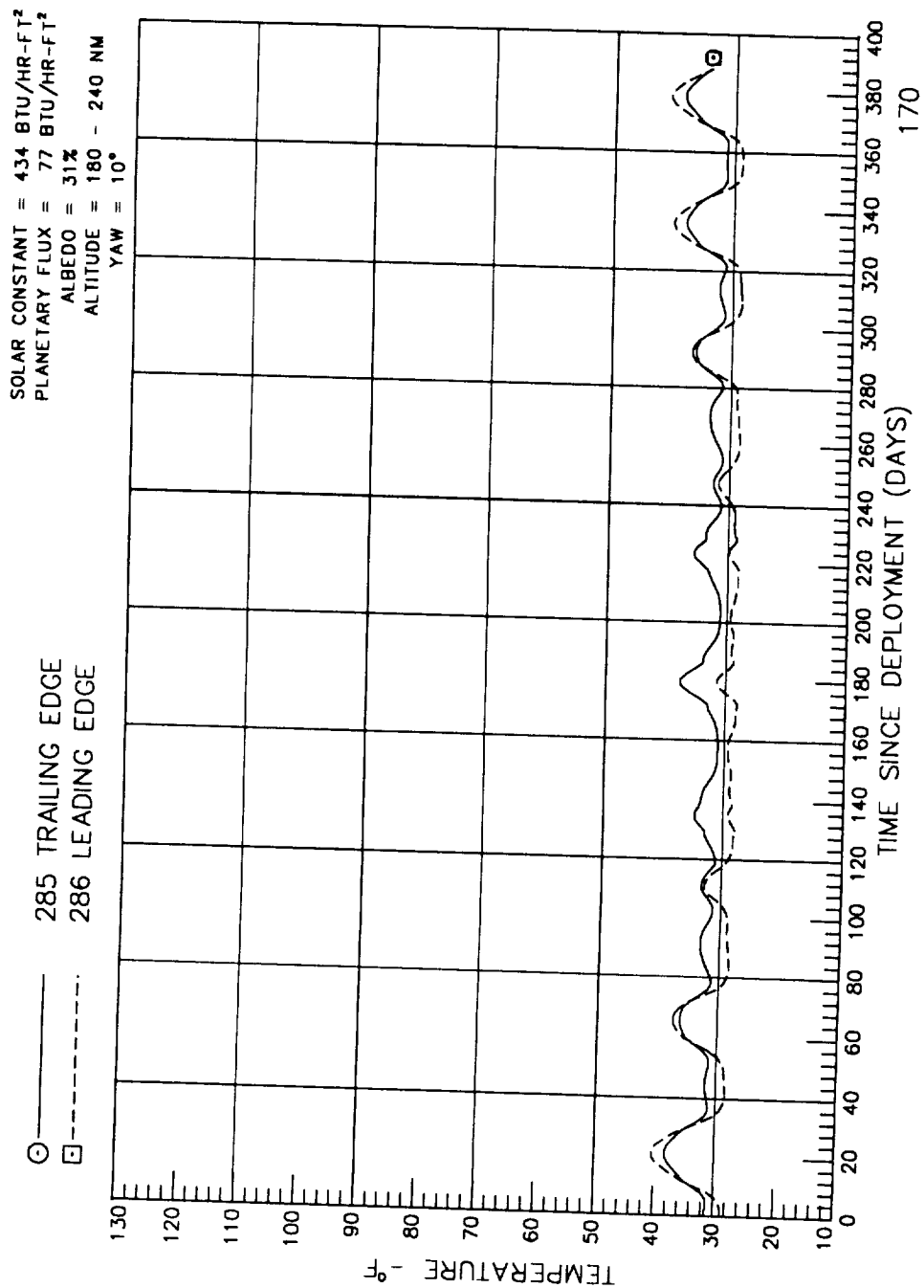
○ — 236 A0139-A BATTERY



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### MAIN SCUFF PLATES



# LONG DURATION EXPOSURE FACILITY

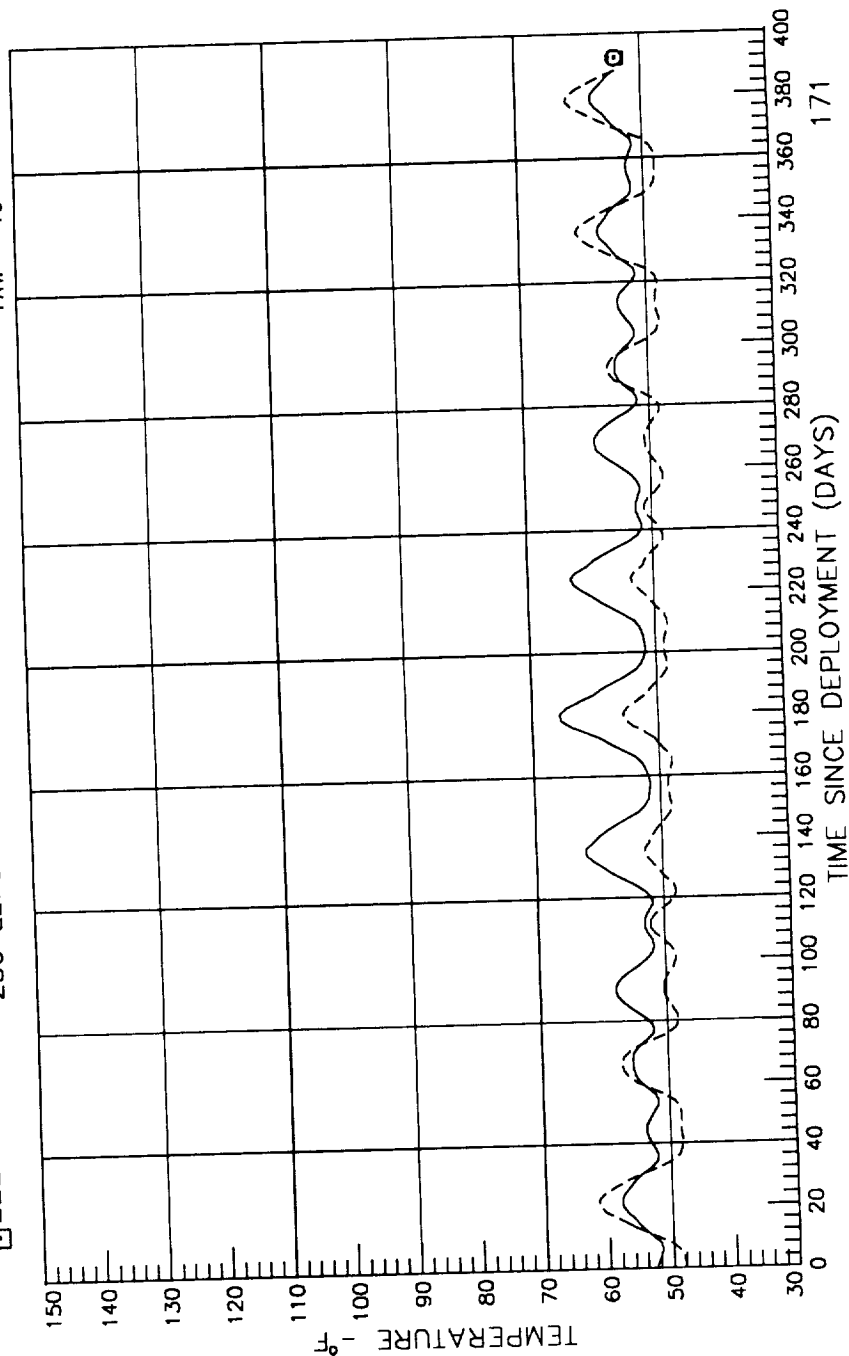
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### MAIN TRUNNION PINS

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

238 TRAILING EDGE  
 239 LEADING EDGE

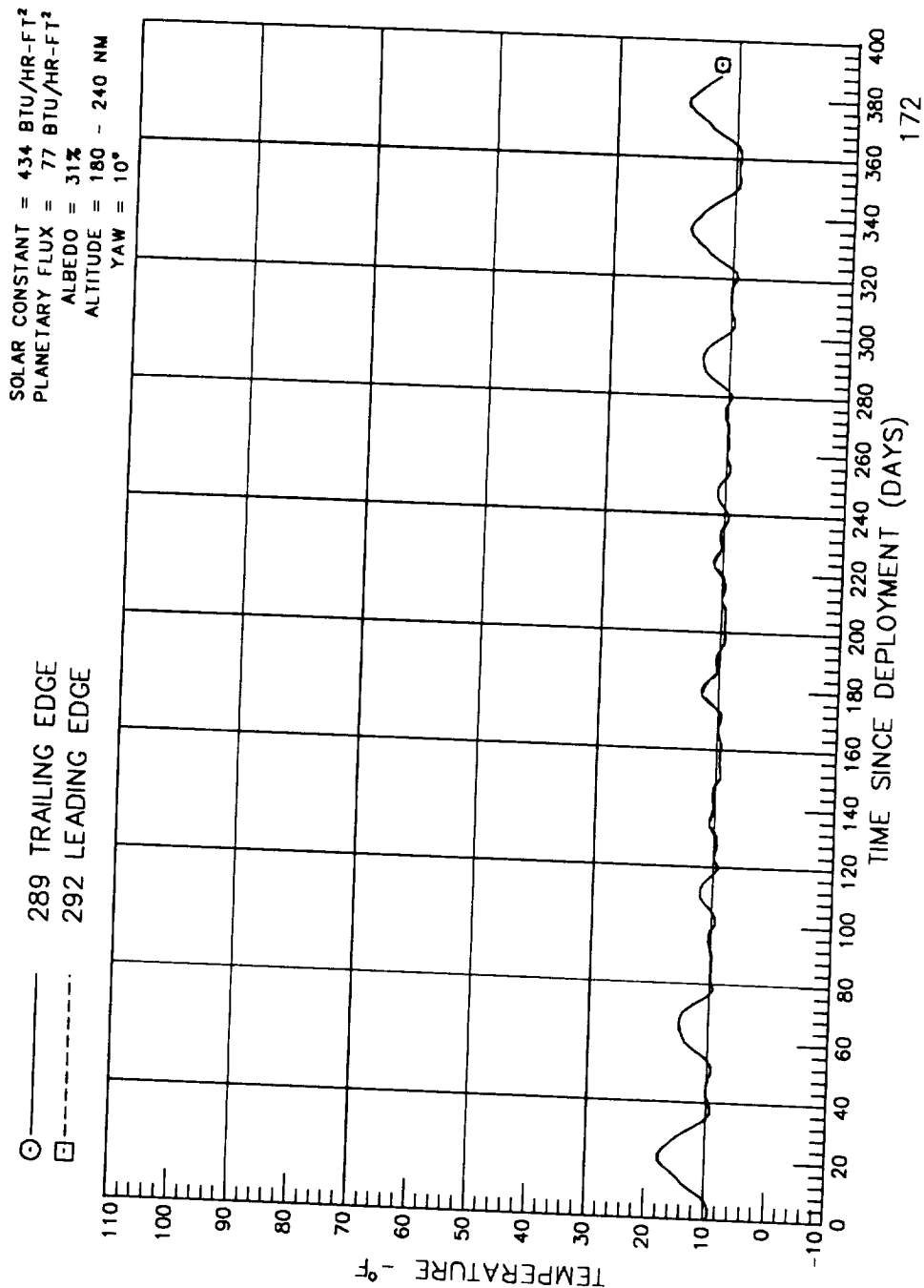
○ ——— 238 TRAILING EDGE  
 □ - - - - 239 LEADING EDGE



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### END SCUFF PLATES



# LONG DURATION EXPOSURE FACILITY

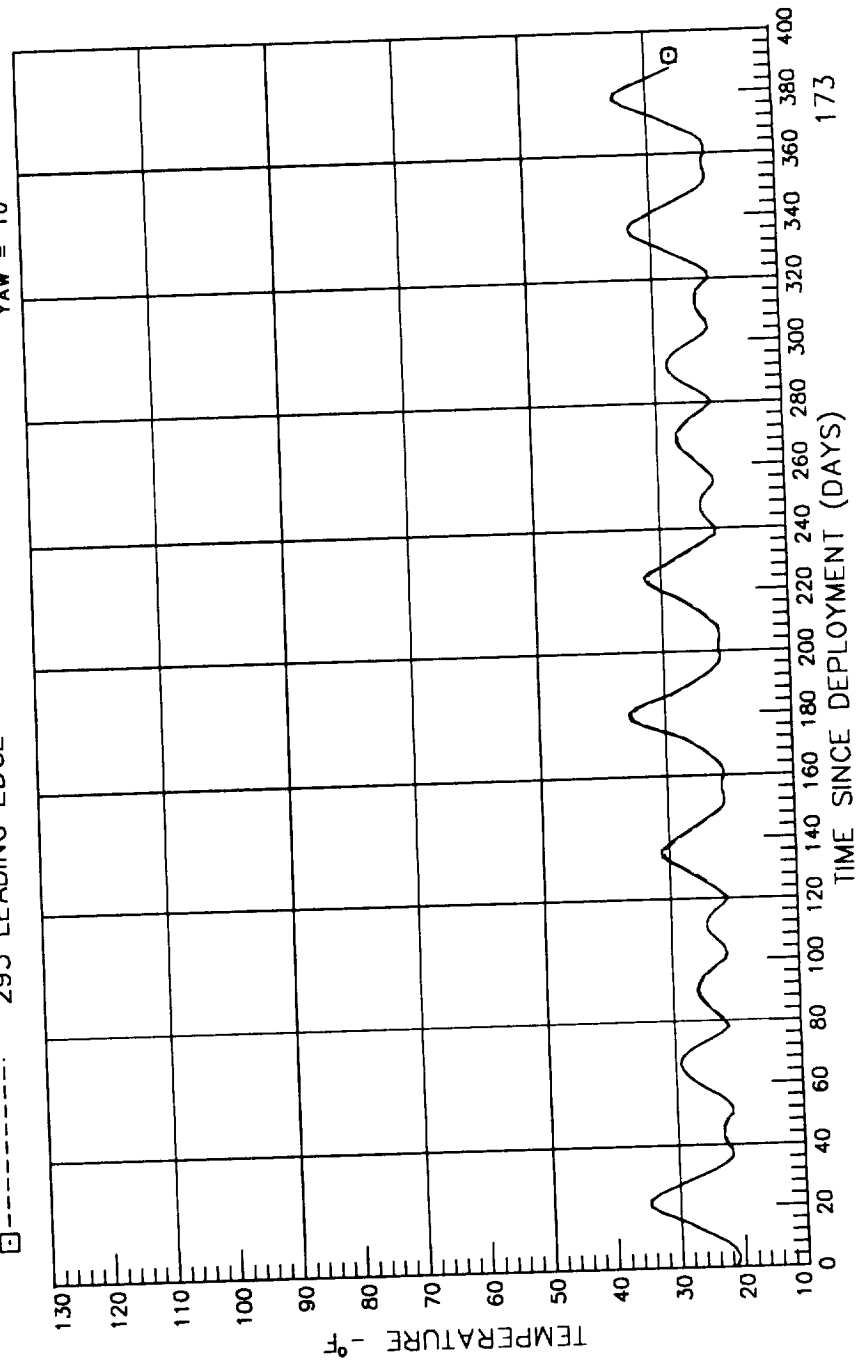
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### END TRUNNION PIN

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

290 TRAILING EDGE  
 293 LEADING EDGE

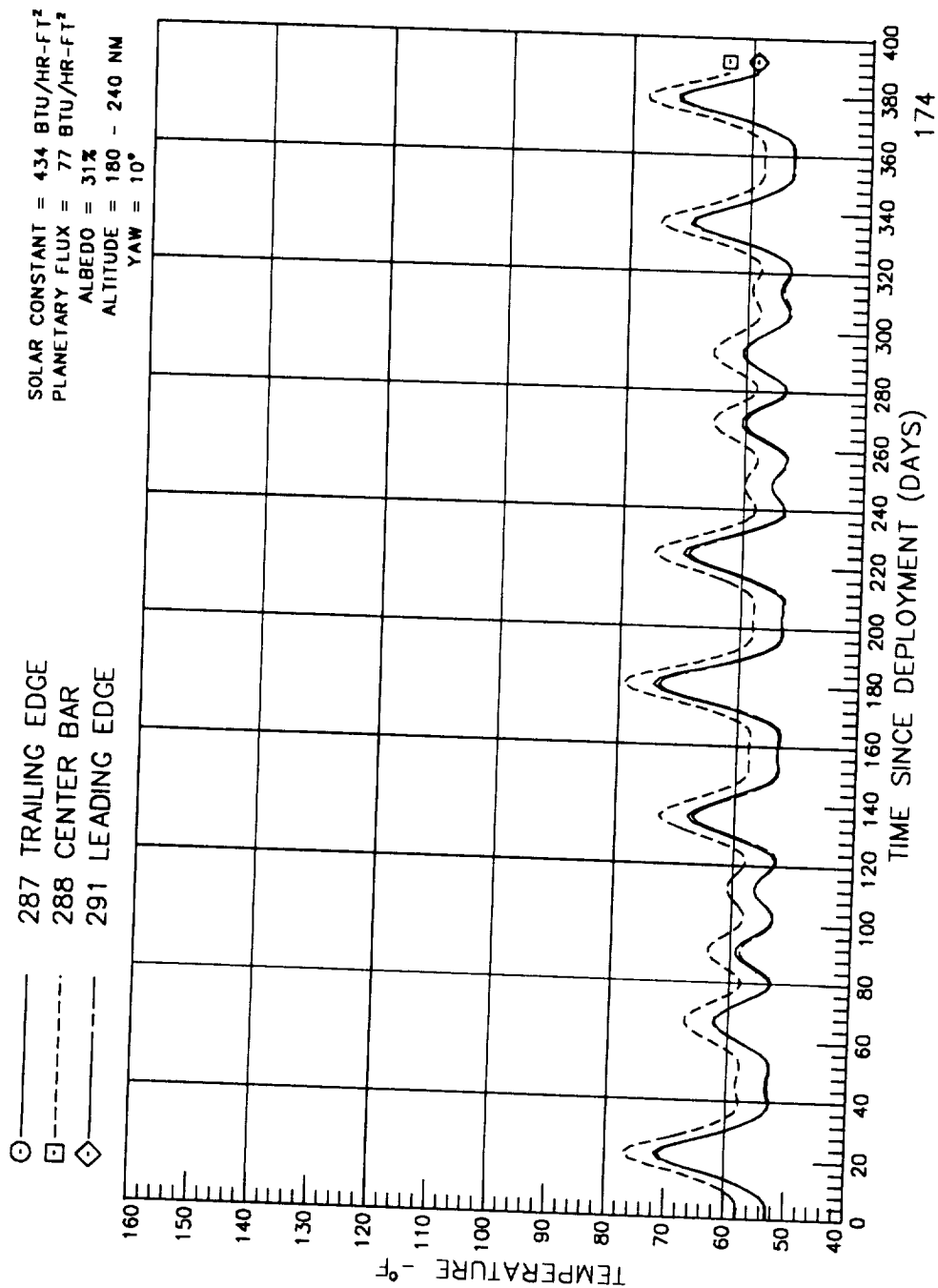
○ ———  
 □ - - - -



# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### END SUPPORT BEAM

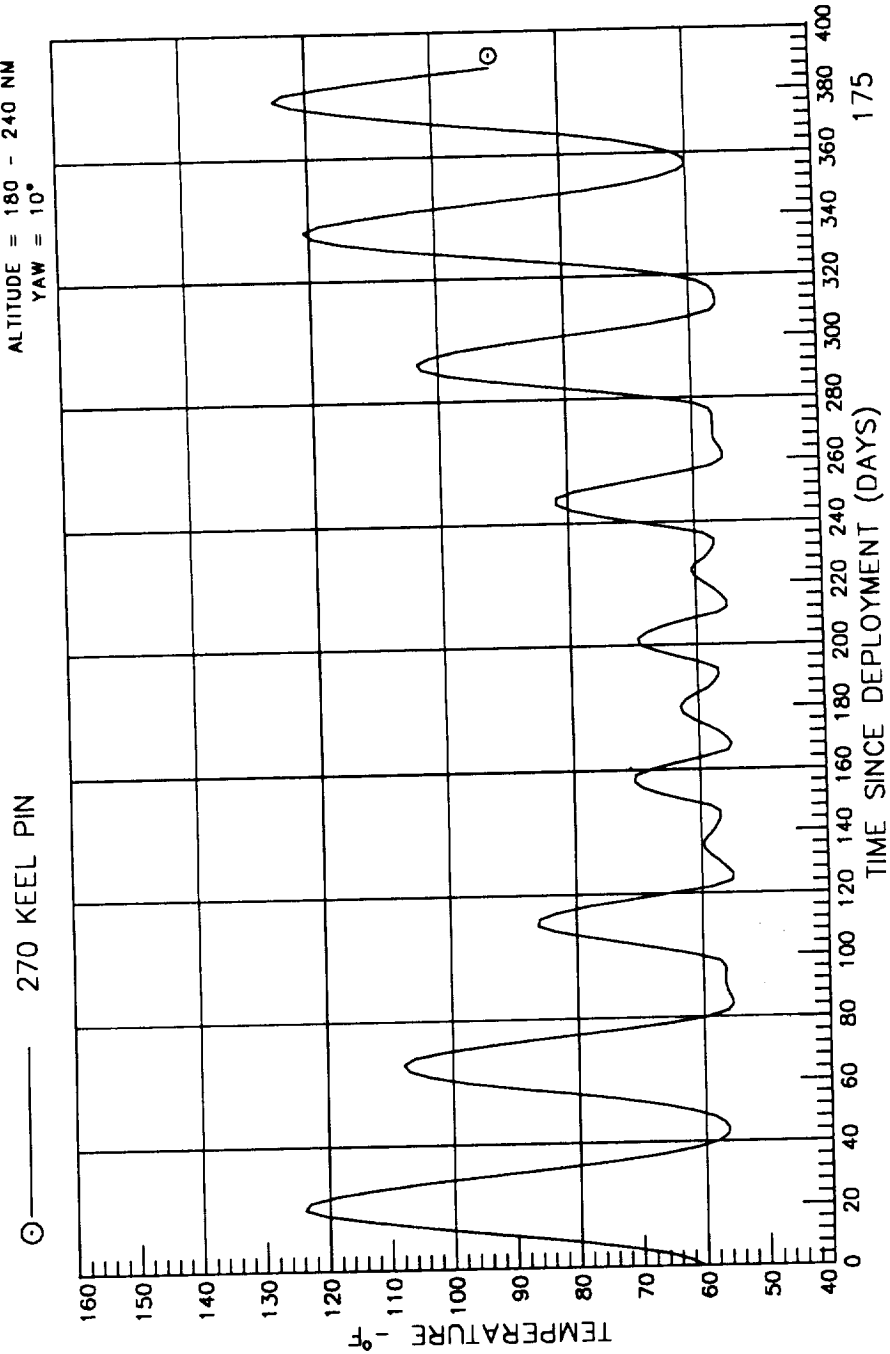


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### KEEL

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

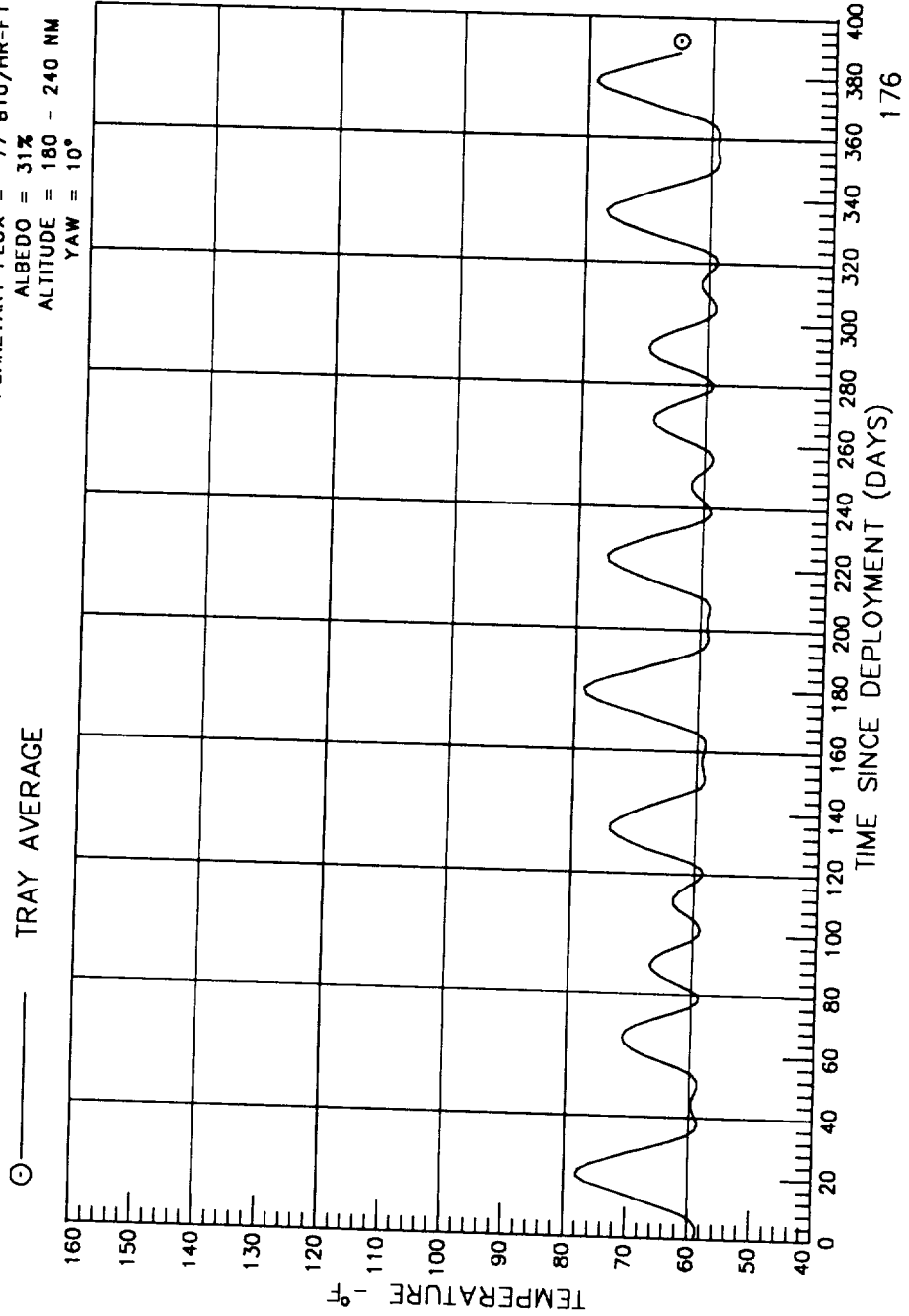


# LONG DURATION EXPOSURE FACILITY

## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### AVERAGE FOR TRAYS 1 - 72

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°





# LONG DURATION EXPOSURE FACILITY

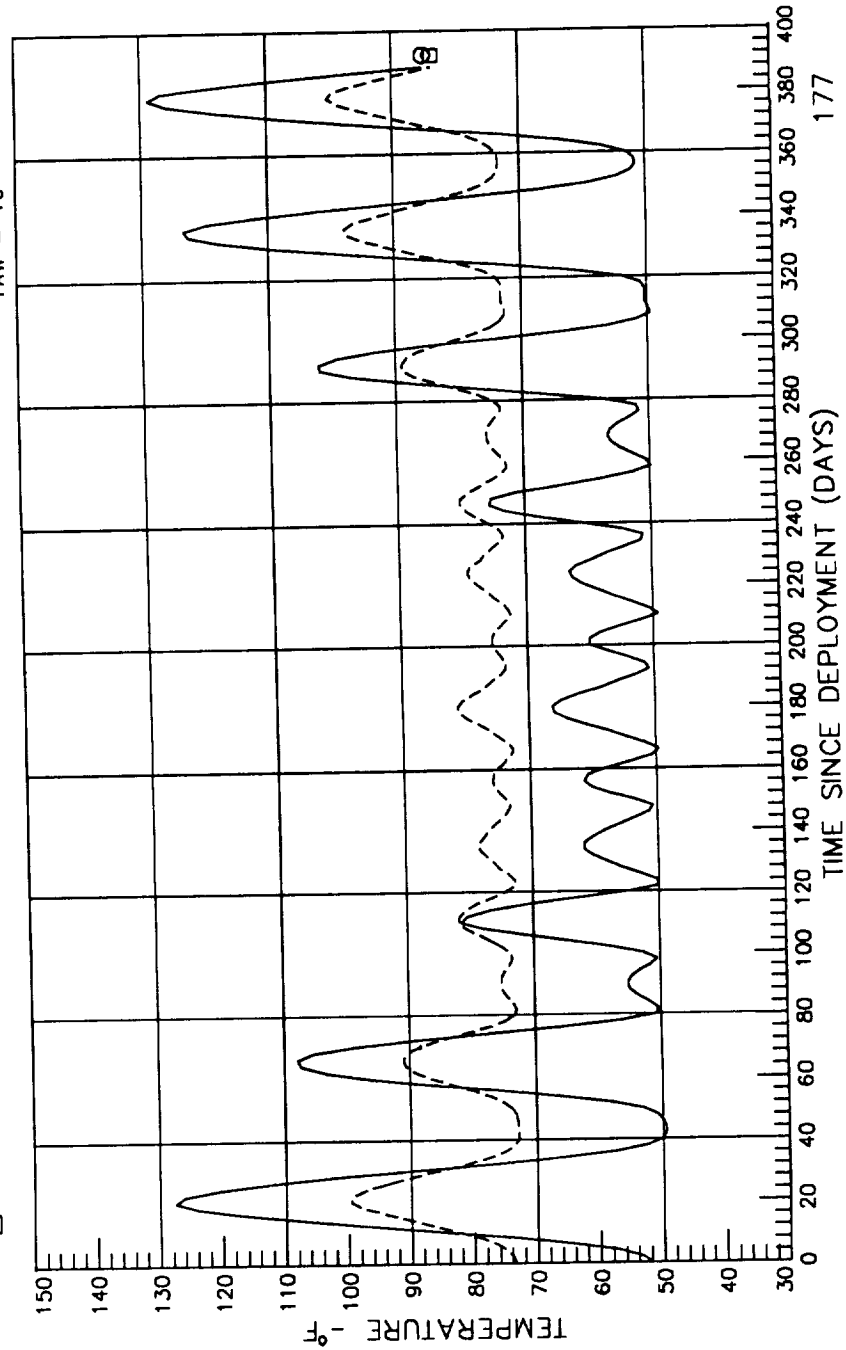
## DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90

### T/C NODES EE & LG 6-7

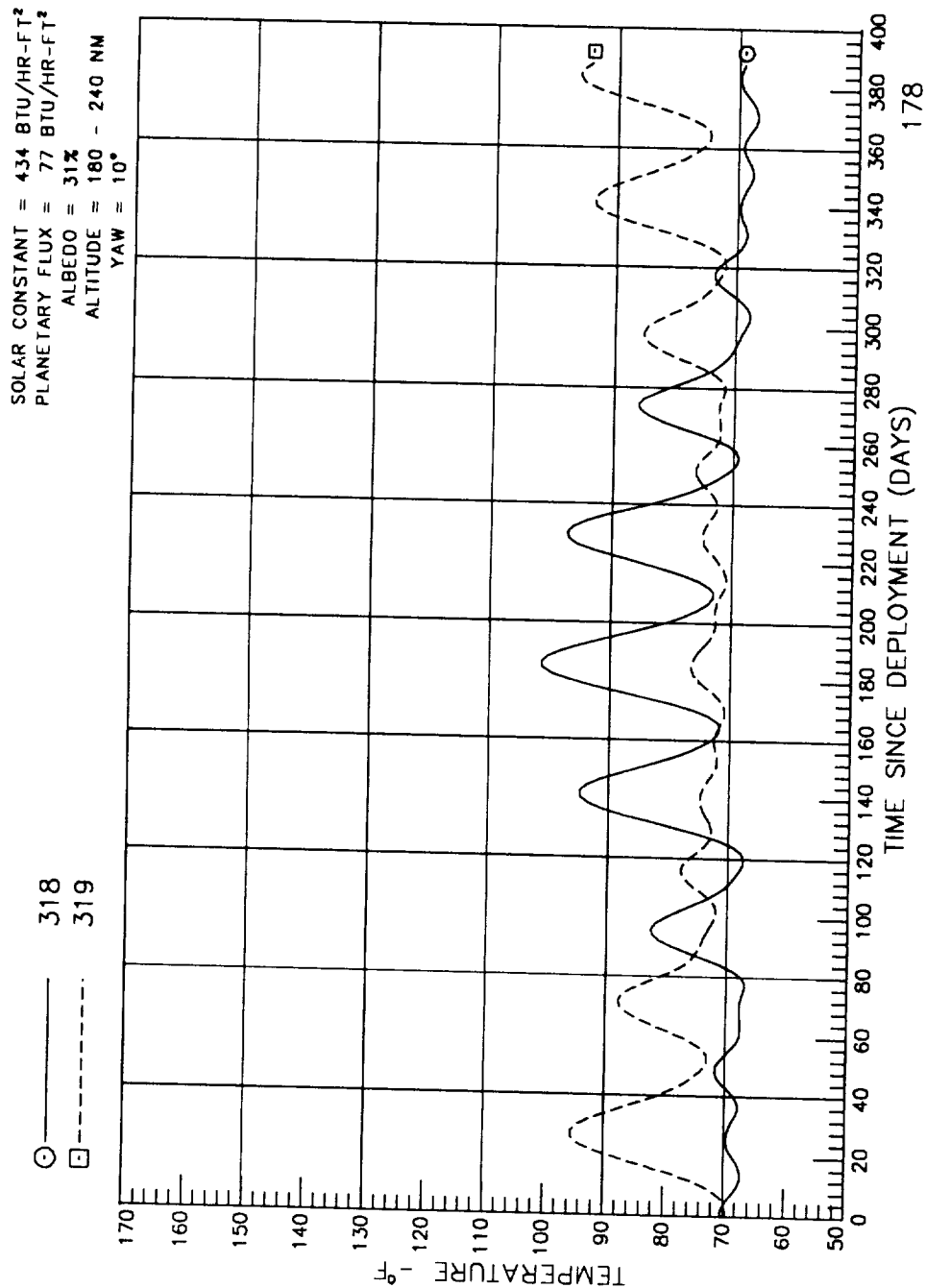
SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

326 LONGERON AT B6  
 327 EARTH END AT 202

○ ——— 326 LONGERON AT B6  
 □ - - - - 327 EARTH END AT 202



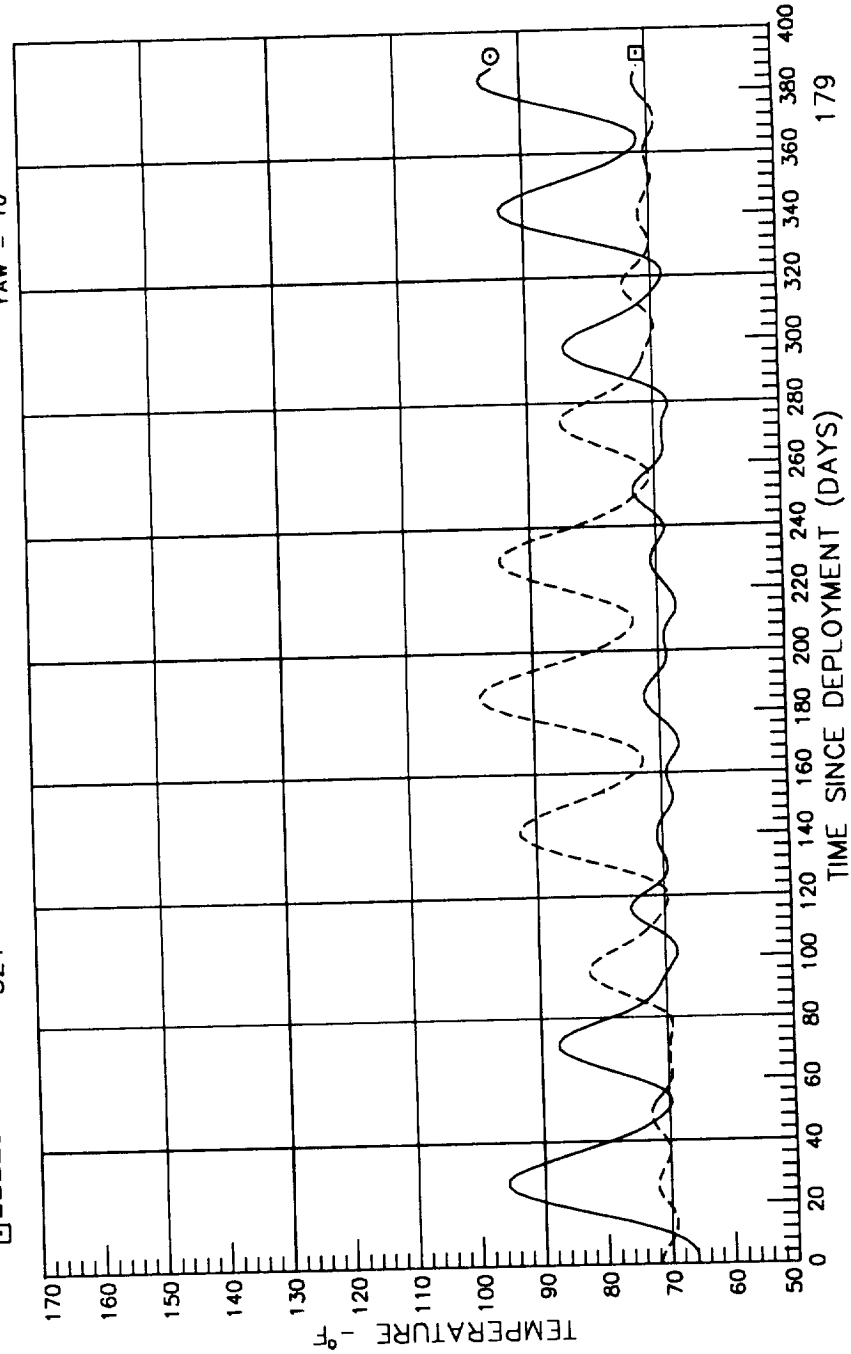
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 INTERIOR STRUTS



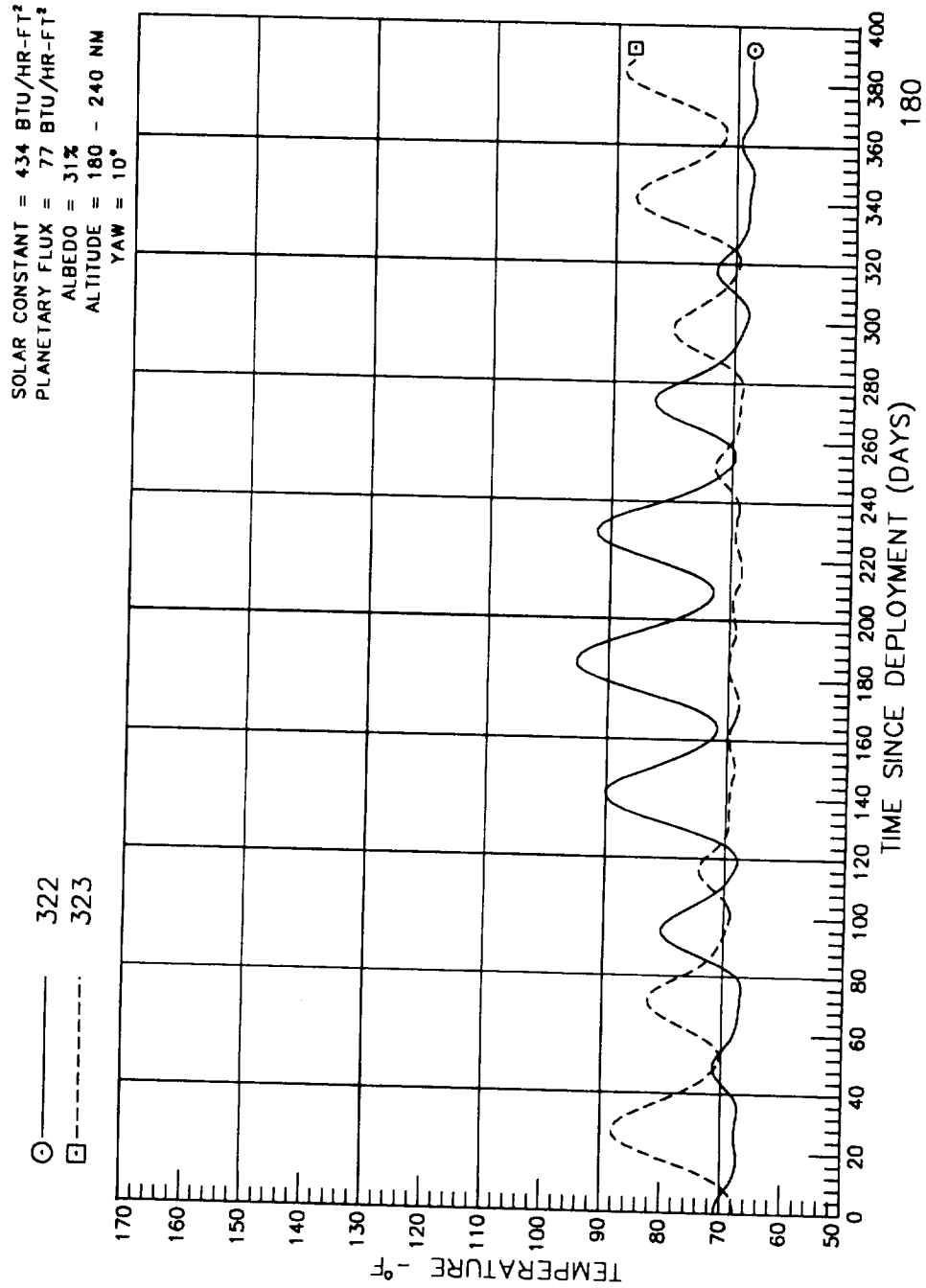
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 INTERIOR STRUTS

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ 320  
 □ 321



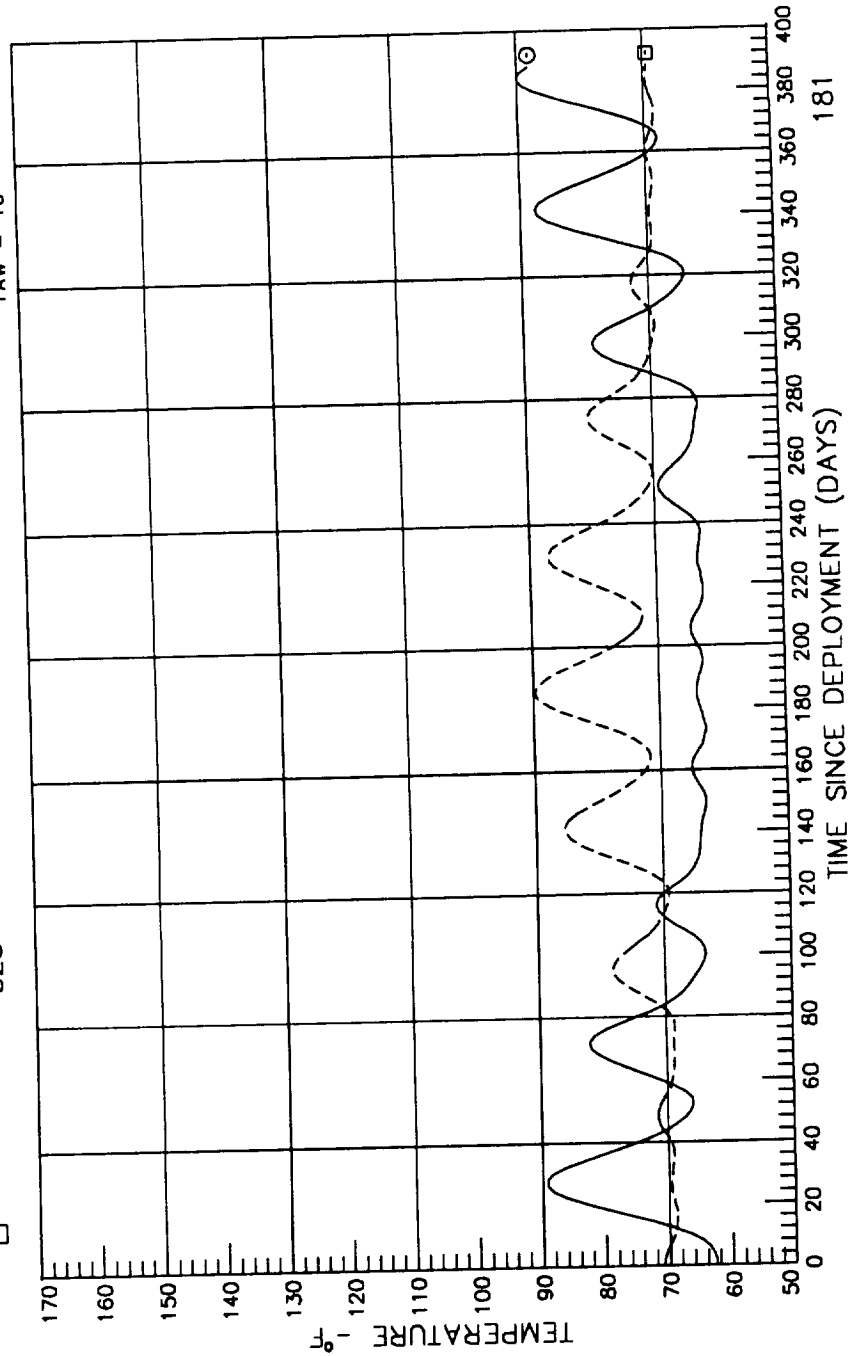
# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 INTERIOR STRUTS



# LONG DURATION EXPOSURE FACILITY DAILY AVERAGE TEMPERATURE 12/20/88 - 1/12/90 INTERIOR STRUTS

SOLAR CONSTANT = 434 BTU/HR-FT<sup>2</sup>  
 PLANETARY FLUX = 77 BTU/HR-FT<sup>2</sup>  
 ALBEDO = 31%  
 ALTITUDE = 180 - 240 NM  
 YAW = 10°

○ — 324  
 □ - - - 325



# REPORT DOCUMENTATION PAGE

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OMB No. 0704-0188

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13. ABSTRACT (Maximum 200 words) This document presents results of the post-flight thermal analysis for the Long Duration Exposure Facility (LDEF) 5-3/4 years mission. The LDEF mission thermal analysis was verified by comparing the thermal model results to flight data from the LDEF Thermal Measurements System (THERM). Post-flight calculated temperatures uncertainties have been reduced to under $\pm 18^\circ\text{F}$ from the pre-flight uncertainties of $\pm 40^\circ\text{F}$ . The THERM consisted of eight temperature sensors, a shared tape recorder, a standard LDEF flight battery, and an electronics control box. The temperatures were measured at selected locations on the LDEF structure interior during the first 390 days of flight and recorded for post-flight analysis. After the LDEF retrieval from Space on January 12, 1990, the tape recorder was recovered from the spacecraft and the data reduced for comparison to the LDEF predicted temperatures. The LDEF mission temperatures were calculated prior to the LDEF deployment on April 7, 1980, and updated after the LDEF retrieval with actual flight parameter data; including thermal fluxes, spacecraft attitudes, thermal coatings degradation, and contamination effects. All updated data used for the calculation of post-flight temperatures is also presented in this document.				
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